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Research Article

Stick to Free or Pay for More? A Marketing-Technology Perspective on Upgrade Intentions in Freemium AI-Powered EdTech Tools

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ABSTRACT

Introduction: Freemium, in this study, is understood as a concept that offers basic services for free while reserving other advanced features for paying or premium users. For several EdTech companies, it has become an effective business model in order to acquire and retain users. Given that these providers strategically strive to make users of free features be converted into paying subscribers, the understanding on how to drive them into upgrading has become increasingly essential.

Objectives: The study aims to: 1) determine the effect of perceived usefulness of premium features on upgrade intention; 2) examine the influence of perceived value on upgrade intention; and 3) investigate whether perceived value mediates the relationship between perceived usefulness and upgrade intention in the context of freemium AI-powered EdTech tools.

Methods: A Quantitative research design was employed in this study using the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique, as the research tries to examine the relationship between perceived usefulness of premium features, perceived value, and upgrade intention. Data were collected from students enrolled both in undergraduate and graduate programs who actively use freemium AI-powered EdTech tools. A 15-item researcher-made survey instrument using a 7-point Likert scale was used, and path analysis was conducted to test the hypotheses.

Results: These findings suggest that users do not upgrade based solely on the usefulness of premium features. Rather, it is their perceived overall value that significantly drives upgrade intention. This reinforces the marketing principle that value perception is more compelling than features alone, especially in AI-enhanced platforms where utility can be abstract or complex.

Conclusions: This study concludes that perceived value is the primary driver of upgrade intentions in freemium AI-powered EdTech tools. While premium features may offer advanced functionalities, they do not directly influence a user's willingness to pay unless they are perceived as valuable. For EdTech providers, this highlights the importance of strategic value communication, not just feature promotion, to convert free users into paying subscribers.

Keywords: Marketing Technology, Educational Technology, Freemium, Perceived Usefulness, Perceived Value, Premium Conversion, AI tools

INTRODUCTION

In the era of innovation and technology, several digital platforms emerged as useful tools in education. With the introduction and rapid growth of educational technologies (EdTech), it has reshaped how students navigate their educational journey, often guided freemium EdTech tools (Almufarreh, 2024). Freemium, in this study, is understood as a concept that offers basic services for free while reserving other advanced features for paying or premium users (Mäntymäki et al., 2019).

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For several EdTech companies, it has become an effective business model in order to acquire and retain users (Singh & Pandey, 2025). Given that these providers strategically strive to make users of free features be converted into paying subscribers, the understanding on how to drive them into upgrading has become increasingly essential.

Central to this process is the perceived usefulness of premium features, which encapsulates the functional value and utility that students anticipate from upgrading (Alsabawy et al., 2016), a concept that bridges marketing strategies with information technology design. Several research studies highlights that the evaluation of the available premium features for students in general is not based on their availability alone, but on their perceived value and ability to enhancing established learning outcomes, including saving time on piling academic requirements (Menon, 2022). This ideation reflects the user's careful evaluation of costs vs. benefits (Mäntymäki et al., 2019), especially when they are in the edge of making upgrade decisions.

Looking into a marketing-technology perspective, in order to sustain the constantly increasing developments in the EdTech industry, the balance between free and premium offerings should be optimized (Panda, 2020; Singh & Pandey, 2025). Through this study, a brief understanding of the above-mentioned variables is essential for designing effective marketing strategies in this context. This will not only attract new users but will also foster long-term engagement and conversion.

LITERATURE REVIEW

Freemium AI-Powered EdTech Tools

Artificial Intelligence (AI)-powered tools have been seen significant growth in the recent years, as it is meaningfully useful especially in the education sector (Saini, 2024; Carballo, 2024). Several of these programs tied to academic related activities offers basic and free-to-use features, with advanced features available in costly premium versions. These technologies being considered 'freemium,' offer limited-time and free-tier access, helping users experiment and try premium features and benefits, before choosing to upgrade (Mäntymäki et al., 2019).

The usage of these freemium AI-powered tools is commonly seen to help users improve academic writing and thoughts construction, with platforms like ChatGPT, Perplexity, QuillBot, Grammarly, and Jenni AI leading this educational-technology (EdTech) transformation.

In academic settings, AI-powered platforms like ChatGPT serves as an EdTech tool, given its power in streamlining literature reviews, idea generation and brainstorming, drafting and refining writing styles, and summarizing complex data on top of other important paid features (Xu, 2025).

However, there are research works documenting its limitations such as occasional hallucinations and lack of source transparency, hence encouraging users to upgrade their current versions to improve its features, or to manually check and verify sources (Alhurati et al., 2023).

Similarly, Perplexity as a tool used in education can assist users with various academic activities and research-related tasks including 1) generation of content ideas, 2) conduct of literature review, and 3) response to follow-up questions. Sources also claim that this EdTech tool can improve structural components of its generated narratives in order to keep readers engaged and can as well convey ideas logically and present arguments cohesively (Yomu AI, 2025). Likewise, Jenni AI, with the goal to overcome writer's block, can provide the same benefits as it helps in generating tailored research prompts, with precise and hassle-free citation support already in place (Jenni AI, n.d.).

QuillBot and Grammarly on the other hand can be observed as competing EdTech tools used by students. They provide almost the same functionality such as grammar checker, tone detection and style guide, plagiarism checker, AI detector, and paraphrasing mechanisms among the many others (Perkins, 2023).

With these platforms available, such elements are being marketed claiming that students both in undergraduate and graduate programs can improve their writing speed especially when availing their premium and paid features (Rukiati et al., 2023). Like any other EdTech tools, the theory of cost versus benefit is being highlighted, as majority of these programs' advanced operations can be used, utilized, and experienced when users avail their paid versions which may also vary depending on the length of subscription.

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Perceived Usefulness of Premium Features

Davis (1989) defined perceived usefulness in his seminal framework, the Technology Acceptance Model (TAM), as "the degree to which a person believes that using a particular system would enhance their job performance". This construct serves as an important and essential predictor of user adoption, and it is critical to examine this variable to predict future use. This model is widely used and consistently reinforced across several offerings and services in the digital landscape, including AI-powered tools.

For an instance, Hu et al. (2025) mentioned in their study that the concept of perceived usefulness has a relationship with purchase intentions of AI tools used for efficiency and productivity. This finding is related to this research as it suggests that users are likely to upgrade the versions of their freemium applications when they see the benefits of improving the quality of their outputs, hence leading to positive user satisfaction (Baluyot, 2025). Additionally, Choung et al. (2022) noted that when users of AI-driven tools perceive the premium features of their programs as functionally trustworthy and dependable, including the perception of its capability of improving their efficacy and enhancing their task performance, perceived usefulness substantially boosts acceptance and upgrade intentions in this context (Rodriguez et al., 2025).

H1. Perceived usefulness of premium features positively influences upgrade intention.

Perceived Value

Perceived value, according to Hamari et al. (2020), is considered to be a user's overall value assessment of a product or service offering in terms of its utility, based on what is received versus what is given. This construct covers the comprehensive assessment of the benefits and satisfaction a customer expects to receive, on top of the offering's actual monetary cost. With this in mind, this factor is expected to be a critical and important driver of user behavior, specifically upgrade intent, in freemium service models (Martins & Rodrigues, 2024).

In the context of freemium AI-powered EdTech tools, perceived value often reflects a multifaceted judgment that includes satisfaction with the tool, performance benefits gained through usage, and an internal cost-benefit analysis comparing the free and premium tiers (Mishra et al., 2018). Users' amount of investments are regarded as worthwhile, valuable, and satisfactory, if premium features are seen to help improve their level of academic performance in terms of productivity and efficiency. Similarly, Youn and Lee (2019) demonstrated that functional, emotional, and social values embedded in premium services led to greater adoption intentions in paid platforms. This is particularly relevant in EdTech, where premium AI features—such as plagiarism detection, personalized feedback, or advanced paraphrasing—can yield tangible academic benefits, thus enhancing perceived performance outcomes.

Moreover, perceived value often acts as a mediator between perceived usefulness and upgrade intention. That is, even when users acknowledge the usefulness of premium features, their intention to pay for those features is more strongly influenced when those features translate into a higher perceived value (Saqr et al., 2024). This mediating role reflects a deeper cognitive evaluation process in which satisfaction, task efficiency, and overall benefit are weighed against the price and necessity of premium access. Hence, in AI-powered EdTech tools, enhancing and clearly communicating the perceived value proposition is vital to encourage transitions from free to paid versions.

H2. Perceived value of using premium EdTech tools positively influences upgrade intention.

H3. Perceived value of using premium EdTech tools mediates the influence of perceived usefulness of premium features on upgrade intention.

Upgrade Intention

In this study, the user's willingness to transition from a free-to-use version to paid subscription is referred to as upgrade intention. Mäntymäki et al., (2019) mentioned that this variable is one of the most valuable and fundamental outcomes when assessing the effectuality of existing freemium business models. According to their recent research, intentions to upgrade are found to be significantly affected by their level of enjoyment, satisfaction, and experience, including the concept of price value. This finding highlights the importance of delivering pleasurable and competitively priced premium features in EdTech tools to nurture upgrade intention.

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Moreover, it is said that when users started to believe that availing the premium tier enhances utility, pleasure, and aligns socially, they are more probable to have high upgrade intentions, especially they have already established trust to the platforms they currently use (Tyrväinen & Karjaluoto, 2024). In addition to this, trialability, according to Mansoor et al., (2024), is the opportunity to try on premium features for a certain period. This strategy influence conversions from the freemium model once users experience the added value. It can also be marketed and communicated to target users in order to trigger the perceived need to avail advanced attributions of the program.

Overall, these insights support the design of strategies that combine compelling premium functionality, credible trial opportunities, and transparent pricing to effectively convert free users into paying subscribers.

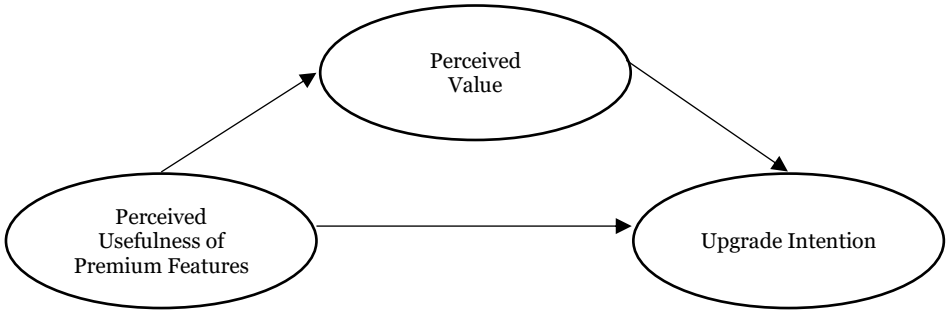

Figure 1. *Research Framework*

METHODS

Research Design and Approach

A Quantitative research design was employed in this study as this examines the relationship between constructs, and to verify the proposed research framework. The researcher utilized SmartPLS version 4.1.1.2. and operated a model using the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique. According to Hair et al. (2022), this procedure is useful in the assessment of hypothesized relationships between specified variables.

Sampling Design and Research Participants

The research participants included active users of freemium AI-powered EdTech tools used in academic purposes as shown in Table 1. Utilizing a purposive sampling methodology, the research made use of 150 valid responses, through which were initially calculated using the 'A-priori Sample Size Calculator for Structural Equation Models' showing a recommendation of 100 sample size (minimum) for the model to achieve sufficient level of statistical power (Soper, 2025).

Here, majority of the respondents are between 18-24 years old (64%). As per sex, female respondents take the lead at 63% as compared to their male counterparts at 37%. Moreover, since the target respondents are students, the demographic profile reveals that majority of the users of freemium AI-powered EdTech tools are in the college level at 53%, while the remaining 47% are in the graduate school, comprised of those taking master's (36%) and doctorate degrees (11%). Relatively, it was also found out that majority (61%) of the respondents use ChatGPT as their go-to freemium platform for academic writing assistance, followed by QuillBot and Grammarly, at 18% and 13% respectively.

Table 1. *Demographics*

Age	***f (%)***	**Education**	***f (%)***
18-24	96 (64%)	Currently in College	79 (53%)
25-31	27 (18%)	Currently in Master's Level	54 (36%)
32-38	16 (11%)	Currently in Doctoral Level	17 (11%)
39-45	6 (4%)		

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Above 45	5 (3%)	**Frequently Used Freemium AI-Powered EdTech Tool**	***f (%)***
		ChatGPT	92 (61%)
Sex	***f (%)***	Perplexity	7 (5%)
Male	55 (37%)	QuillBot	27 (18%)
Female	95 (63%)	Grammarly	19 (13%)
		Jenni AI	5 (3%)

n = 150

Research Procedures and Data Collection

This study employed a self-made survey instrument comprising of a total of fifteen (15) indicators, as broken down in Table 2. The questionnaire was electronically sent to respondents matching the required criteria via Google Forms.

Table 2. *Measurement Items*

Constructs		Measurement Items
Perceived Usefulness of Premium Features (PUPF)	PUPF1	The premium features of free-to-use EdTech tools can help me accomplish academic tasks more effectively.
	PUPF2	I believe the premium version offers features that are significantly better than the free version.
	PUPF3	Using premium features would enhance the quality of my academic output.
	PUPF4	The premium features would help me work more efficiently and save me time on academic activities.
	PUPF5	I think the premium features of the free-to-use EdTech tools I use would improve my learning experience overall.
Perceived Value (PV)	PV1	I believe the benefits of the premium version are worth the price.
	PV2	The additional features in premium versions provide good value for money.
	PV3	Compared to their free versions, premium EdTech tools provide more meaningful benefits.
	PV4	Paying for premium access is reasonable, given the academic advantages it offers.
	PV5	I would be satisfied spending money on premium versions of EdTech tools.
Upgrade Intention (UI)	UI1	I am likely to upgrade to premium versions of the EdTech tools I use.
	UI2	I am open to paying more for the premium features if needed.
	UI3	I have considered purchasing the premium version of the EdTech tools I currently use.
	UI4	I would consider subscribing to premium features if they can support my studies better.
	UI5	I intend to upgrade to the premium version when I have the resources to do so.

This tool consists of the following sections: 1) demographic profile of the respondents; 2) perceived usefulness of premium features; 3) perceived value of using premium EdTech tools; and 3) willingness to upgrade to premium features. All sections, except the demographic characteristics were measured using a seven-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree), as broken down in Table 2.

RESULTS AND DISCUSSION

Measurement Model

As an initial requirement prior a more in-depth evaluation of the structural model, the framework was checked for the following: 1) reliability; 2) validity; 3) outer collinearity; and 4) sampling adequacy.

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Table 3 shows that all constructs (PUPF, PV, and UI) and their measurement items meet the established measures for 1) reliability; 2) validity; 3) outer collinearity; and 4) sampling adequacy. All indicators revealed factor loading values greater than .708. Relatively, values for both Cronbach's Alpha (α) and Composite Reliability (CR) indicated results above the .7 standard, but no more than .95. This underscores commendable internal consistency and reliability (Sarstedt et al., 2022).

Moreover, the Average Variance Extracted (AVE) revealed acceptable values ≥ .50, supporting convergent validity. Hair et al. (2022) validated this claim stating that the constructs account for >50% of the variance in their indicators. For collinearity statistics, the Variance Inflation Factor (VIF) resulted to indicator values not greater than 5.0, highlighting no multicollinearity issues considered significant. Finally, scores under the Kaiser-Meyer-Olkin (KMO), derived using the statistical software JAMOVI version 2.6.44.0, are within the ranges of marvelous (0.9 ≤ KMO ≤ 1.0) and meritorious (0.8 ≤ KMO ≤ 0.9) measures of sampling adequacy, with an overall KMO score of .924, considered more than the adequate KMO value of .8 (Kaiser, 1974).

Table 3. *Evaluation of the Structural Model*

Constructs	Items	Loadings	α	CR	AVE	VIF	KMO
		≥ .708	*≥ .7*	*CR ≥ .7*	*≥ .5*	*< 5.0*	*≥ .8*
PUPF	PUPF1	.845	.894	.897	.703	2.412	.897
	PUPF2	.821				2.275	.891
	PUPF3	.882				3.090	.928
	PUPF4	.859				2.844	.913
	PUPF5	.781				1.809	.948
PV	PV1	.851	.902	.911	.719	2.502	.933
	PV2	.864				2.604	.950
	PV3	.861				2.532	.957
	PV4	.776				1.983	.926
	PV5	.884				2.779	.958
UI	UI1	.845	.884	.885	.684	2.381	.922
	UI2	.857				2.712	.901
	UI3	.802				2.125	.888
	UI4	.783				2.033	.920
	UI5	.846				2.499	.914

Overall KMO Score = .924

On the other hand, Table 4 presents the evaluation of constructs in terms of discriminant validity via Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio. Here, it can be implied that the Fornell-Larcker criterion is satisfied, indicating acceptable discriminant validity since the square root of the AVE are greater than the loadings. Supporting this, HTMT is also fulfilled given that the values fall within the acceptable threshold and range of < 0.85 (Henseler et al., 2015).

Table 4. *Discriminant Validity*

Constructs	PUPF	PV	UI
PUPF	**0.838**	0.847	0.660
PV	0.770	**0.848**	0.805
UI	0.590	0.723	**0.827**

Diagonal values in bold are the square root of the Average Variance Extracted (AVE). Below them are correlations, while the values above are heterotrait-monotrait (HTMT) ratios.

Overall Model Fit

According to credible sources, the values shown in the model signifies good fit since the Standardized Root Mean Square Residual (SRMR) of 0.065 falls within the acceptable range of 0 to 0.08 (Henseler et al., 2014; Hair et al., 2018). This indicates and shows that the observed and projected correlations are closely aligned with each other.

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On the other hand, the Normed Fit Index (NFI) resulted to 0.844. This value falls below the commonly accepted threshold of >0.90 (Lohmöller, 1989; Hair et al., 2013; Schuberth et al., 2023) probably because of fit underestimation due to its limitation of having a relatively small sample size.

Influence of Perceived Usefulness of Premium Features on Upgrade Intention

The direct effect of perceived usefulness of premium features (PUPF) on upgrade intention (UI) is said to be non-significant (β = 0.082, p = 0.482), suggesting that usefulness alone does not directly drive the intention to upgrade to premium features of AI-powered EdTech tools. However, it was found out in this study that perceived value (PV) significantly influenced upgrade intention (UI) (β = 0.660, p < 0.001), indicating that users' valuation of the premium features can be highlighted as a strong motivator for upgrading free-to-use AI-powered EdTech tools. With this scenario, it can be inferred that H1 (Perceived usefulness of premium features positively influences upgrade intention) is rejected, while H2 (Perceived value of using premium EdTech tools positively influences upgrade intention) is accepted.

Table 5. *PLS Path Coefficients*

Hypothesis	*Path*	*β*	*M*	*SD*	*t*	*p*
H1 (Reject)	PUPF→UI	0.082	0.083	0.116	0.703	0.482
H2 (Accept)	PV→UI	0.660	0.661	0.090	7.351	0.000

Mediating Effect of Perceived Value

The indirect effect of perceived usefulness of premium features (PUPF) on upgrade intention (UI) through perceived value (PV) resulted as strong and significant (β = 0.508, p < 0.001). The VAF (Variance Accounted For) is calculated by dividing the total effects (0.508 + 0.082 = 0.590) to the indirect effect (0.508). In this case, the VAF resulted to 0.861, indicating full mediation. This means that in the context of free-to-use AI-powered EdTech tools, PUPF impacts UI only through perceived value, not directly. Hence, H3 (Perceived value of using premium EdTech tools mediates the influence of perceived usefulness of premium features on upgrade intention) is accepted.

Table 6. *Mediation Analysis*

Hypothesis	*Path*	*β*	*M*	*SD*	*t*	*p*	*VAF*	*Mediation*
H3 (Accept)	PUPF→PV →UI	0.508	0.511	0.074	6.861	0.000	0.861	Full mediation

Final Model

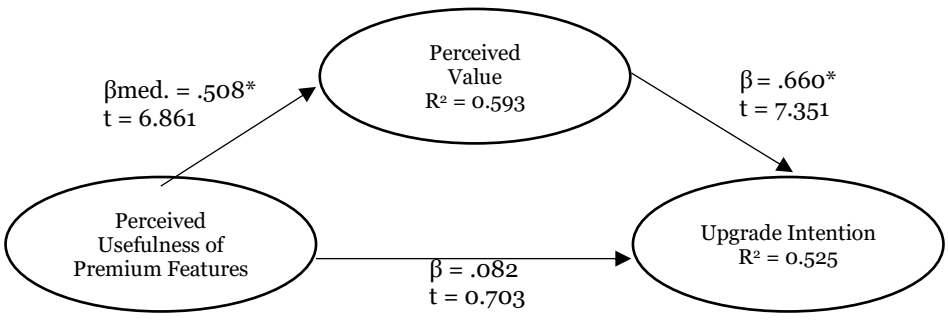

Figure 2. *Final Model*

* p<.001

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CONCLUSION

Taking into consideration a marketing-technology approach, it is important to highlight the results of this study as a crucial element in designing strategies that both captures functionality and value. As the overall findings suggest that users do not upgrade entirely based on the available functions of the AI-powered EdTech tools they use, and that their perception of the overall value significantly drives their upgrade intention to premium features, this reinforces the marketing principle that value perception is as important and compelling than providing features alone.

Having said that, strategic value communication can be added in the priority list of marketers in offering their products and services in the market, rather than solely focusing on feature promotion and product advertising. It should be well-communicated with customers and strategize that as users of this product or service offering, they clearly understand that the features integrated into it is not only useful but can also be translated into more meaningful benefits like learning improvement, efficiency, and productivity, hence the value proposition.

In application, technology-driven marketing and communication strategies should put emphasis and weight to value outcomes, including highlights of skill gains or success stories, instead of mere feature lists. To drive value perception on the other hand, longer but limited-time trials or partial access to premium features can be an effective strategy to be implemented as it lets users experience the communicated value or benefit. This will help on building their trust and confidence to the offered product or service, and in developing motivation to upgrade in the future.

In simple terms, always design with perceived value in mind, communicate value over functionality, and utilize compelling strategies to create value perception. With these concepts in mind, the growth in number of users upgrading their application's current version is underway, and that marketers can now convert free users into paying subscribers.

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