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Evaluation of the use of *ChatGPT* from the perspective of technology acceptance models: A research on *Youtube* videos

ChatGPT'nin kullanımının teknoloji kabul modelleri perspektifinden değerlendirilmesi: *Youtube* videoları üzerine bir araştırma

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Abstract *ChatGPT*, an innovative and widely accessible Artifical Intelligence chatbot, represents a transformative advancement in Artificial Intelligence, offering a unique opportunity for the general public to engage directly with sophisticated Artificial Intelligence technology. This study investigates the factors influencing the acceptance and dissemination of *ChatGPT* by applying established technology acceptance models. By analyzing relevant *Youtube* videos created by early adopters and innovative users, the study identifies key themes using Latent Dirichlet Allocation. These themes are evaluated within the framework of 'Unified Theory of Acceptance and Use of Technology,' focusing on factors such as performance expectancy, effort expectancy, facilitating conditions, hedonic motivation and price value. Additional elements, including perceived interactivity, empathy, and personal novelty, were examined through the lens of other technology acceptance models. The study also proposes extending current models to include new variables that are increasingly relevant to Artificial Intelligence applications, such as work motivation, perceived autonomy, perceived competence, and status motivation. These findings suggest ways to refine theoretical models to account for the unique characteristics of Artificial Intelligence technologies like *ChatGPT*. This research opens the door for further studies on Artificial Intelligence adoption and its broader societal impact.

Öz *ChatGPT*, yenilikçi ve geniş erişime sahip bir yapay zeka sohbet botu olarak, yapay zeka alanında dönüştürücü bir gelişmeyi temsil etmekte ve genel halkın sofistike yapay zeka teknolojisiyle doğrudan etkileşim kurmasına benzersiz bir fırsat sunmaktadır. Bu çalışma, *ChatGPT*'nin kabulü ve yayılımını etkileyen faktörleri teknoloji kabul modelleri çerçevesinde incelemektedir. Erken benimseyenler ve yenilikçi kullanıcılar tarafından oluşturulan popüler *Youtube* videoları analiz edilerek, 'Örtülü Dirichlet Ayrımı' yöntemi ile ana temalar belirlenmiştir. Bu temalar, performans beklentisi, çaba beklentisi, kolaylaştırıcı koşullar, hazcı motivasyon ve fiyat değeri gibi 'Birleşik Teknoloji Kabul ve Kullanım Modeli' çerçevesindeki faktörler açısından değerlendirilmiştir. Algılanan etkileşim, empati ve kişisel yenilik gibi ek unsurlar ise diğer teknoloji kabul modelleri perspektifinden incelenmiştir. Çalışma ayrıca, yapay zeka uygulamalarına giderek daha fazla önem kazanan iş motivasyonu, algılanan özerklik, algılanan yeterlilik ve statü motivasyonu gibi yeni değişkenleri içerecek şekilde mevcut modellerin genişletilmesini önermektedir. Bu bulgular, *ChatGPT* gibi yapay zeka teknolojilerinin kendine özgü özelliklerini hesaba katacak şekilde teorik modellerin iyileştirilmesine yönelik yollar önermektedir. Bu araştırma, yapay zekanın benimsenmesi ve bunun daha geniş toplumsal etkileri üzerine yapılacak yeni çalışmalara kapı açmaktadır.

Keywords ChatGPT · topic analysis · technology acceptance models · Latent Dirichlet Allocation · Artificial Intelligence adoption

Anahtar Kelimeler ChatGPT · konu analizi · teknoloji kabul modelleri · Örtülü Dirichlet Ayrımı · yapay zeka benimsenmesi

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Evaluation of the use of *ChatGPT* from the perspective of technology acceptance models: A research on *Youtube* videos

The field of Artificail Intelligence (AI) is based on concepts such as deep learning and machine learning. AI applications aim to perform specific tasks using techniques such as data mining, data analysis, and big data processing (Khan et al., 2023). The increasing usage of AI applications is often likened to the digital and industrial revolutions (Sun & Medaglia, 2019). Chatbots are a type of AI application that utilise natural language processing technology (NLP) to understand user intentions and engage in human-like communication. The term "chatbot" is derived from the combination of the words "chat" and "robot," and refers to systems or services that can communicate in natural human language (Radziwill & Benton, 2017). Chatbots can be customized for different purposes using self-learning algorithms (Mogaji et al., 2021). In this context, there are customized chatbots in digital environments for various purposes and at different levels of sophistication.

ChatGPT is a general-purpose chatbot application that utilises a large language model released by OpenAI and made available for free under certain conditions (OpenAI, 2023). It has been trained on various large textual datasets, enabling *ChatGPT* to learn the nuances and context of human language, and thus provide successful AI-based responses to questions posed (Lund & Wang, 2023). What distinguishes *ChatGPT* from traditional chatbots is its ability to generate meaningful textual responses across a wide range of contexts as a pre-trained model (Menon & Shilpa, 2023). Within the general definition of chatbots, *ChatGPT* has positioned itself uniquely due to its versatility for different purposes and its status as a highly trained system.

It is important to examine the attitudes of early adopters towards new technologies, such as *ChatGPT*, in order to understand the acceptance and diffusion of these technologies. According to the diffusion of innovation theory (Rogers & Williams, 1983), there are different categories in the adoption of a new technology, including innovators, who are the first to try the innovation, early adopters, who are opinion leaders, early majority adopters, late majority sceptics, laggards.

Early adopters can shape perceptions of new technologies and positively influence the perceived usability of chatbots. In addition, the influence of early adopters can help reduce perceived risks and barriers that may hinder the adoption of related technologies (Menon & Shilpa, 2023).

Youtube is a rich platform that can meet educational needs in different subjects, providing open access to information that can benefit different segments of society (Colás-Bravo & Quintero-Rodríguez, 2023). Much video content dealing with the introduction, evaluation and examples of use of various new technologies is created by *Youtube* publishers and published on the *Youtube* platform. Accordingly, *Youtube* publishers with a certain number of subscribers can be considered innovators or early adopter opinion leaders. *YouTube* publishers' experiences of their use of *ChatGPT* can be valuable in understanding technology acceptance models from the perspective of pioneering users of large language model AI applications, providing insights into the use of AI-powered chatbots. In this context, analysing the content of highly-viewed videos by *Youtube* publishers on the topic can yield important results in terms of understanding user experiences, uncovering factors related to adoption and diffusion and shedding light on technology acceptance models for AI-powered chatbot applications.

In this study, the most viewed videos about *ChatGPT* usage on the *Youtube* platform will be examined and the usage examples presented in this area will be classified under specific themes and headings using a topic analysis approach (Vaismoradi et al., 2016; McCaslin & Scott, 2003; Rodriguez & Storer, 2020). Building upon the insights gained from the topic analysis, the themes and headings identified based on the usage examples will be evaluated within the framework of theoretical models related to technology acceptance. Through these evaluations, the explanatory scope of the existing technology acceptance models regarding the adoption and diffusion of *ChatGPT* will be discussed. In addition, new factors that extend technology acceptance models for AI-based large language models, such as *ChatGPT*, will be proposed within the framework of themes and headings identified by the usage examples. The resulting evaluations are expected to be beneficial in terms of the theoretical frameworks related to technology acceptance.

Technology acceptance models and chatbot

Various theories or models attempt to explain the acceptance and diffusion of new technologies in the literature. Due to the complexity of predicting human behaviours, these models vary. Some of these models can be listed chronologically as the Theory of Reasoned Action (TRA) (1975), Social Cognitive Theory (SCT) (1986), Technology Acceptance Model (TAM) (1986, 1989), Theory of Planned Behavior (TPB) (1991), Model of PC Utilization (MPCU) (1991), Motivation Model (MM) (1992), Combined TAM – TPB (1995), Innovation Diffusion Theory (IDT) (1995), Extension of TAM (TAM2) (2000), Unified Theory of Acceptance and Use of Technology (UTAUT) (2003), Technology Acceptance Model (TAM3) (2008), and Extending Unified Theory of Acceptance and Use of Technology (UTAUT2) (2012) (Alomary & Woollard, 2015).

The UTAUT model, which was developed after the TAM model—one of the most widely used and reported frameworks in the context of social sciences (Teo et al., 2019)—was introduced by Venkatesh et al. (2003). It was developed by drawing upon various models related to technology acceptance and usage, including the 'Reasoned Action Theory' (TRA), 'Planned Behavior Theory' (TPB), 'Innovation Diffusion Theory' (IDT), 'Technology Acceptance Model' (TAM), 'Motivational Model' (MM), 'Model of PC Utilization' (MPCU) and 'Social Cognitive Theory' (SCT). In the model, 'performance expectancy,' 'effort expectancy,' 'facilitating conditions' and social influence' are identified as key factors influencing behavioral intention toward the use of new technologies.

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) theory, developed by Venkatesh et al. (2012) and built upon the UTAUT model, identifies seven factors related to the intention of using new technologies. These factors are 'Performance Expectancy,' 'Effort Expectancy,' 'Social Influence,' 'Facilitating Conditions,' 'Hedonic Motivation,' 'Price Value,' and 'Habit.' Among the factors introduced to the UTAUT model's variables, "Hedonic Motivation," "Price Value," and "Habit" are commonly used in technology acceptance research (Duarte & Pinho, 2019). Furthermore, scientific reviews indicate that the UTAUT2 model is more focused on explaining the acceptance and use of technology by individuals rather than organizations, distinguishing it from the UTAUT model (Cabrera-Sánchez et al., 2021).

Xiong et al. (2023), in their literature review for the years 2013-2022 on the adoption of AI products, found that the TAM and UTAUT models have been predominantly used in studies related to this area. As examples of studies conducted under the UTAUT model to study the adoption of AI tools, some works on chatbots (Balakrishnan et al., 2022; Mogaji et al., 2021), virtual assistants (Valtolina et al., 2022), recommendation systems (Wang et al., 2015), predictive systems (Raffaghelli et al., 2022) and others have been highlighted. In addition, the UTAUT model has been used in some studies (Saari et al., 2022; Šumak & Šorgo, 2016) to understand the impact of AI technologies on early adopters (Menon & Shilpa, 2023). Cabrera-Sánchez et al. (2021) used the UTAUT2 model in their research on the use and adoption of AI applications. Based on their studies with a heterogeneous group in Spain, they showed that behavioural intention significantly influences

the usage behaviour of AI and that performance expectancy and hedonic motivational factors also have a significant impact on behavioural intention. They also found that the UTAUT2 model was consistent with the research findings of their studies.

Despite the adaptability of UTAUT2 to different technologies, Venkatesh et al. (2012) emphasised that factors influencing the adoption of new information systems may vary according to specific situations and contexts. While research on the adoption of AI products at the individual user level has increased, especially since 2019, it is not yet at a sufficient level to establish a technology acceptance framework for the field (Xiong et al., 2023). In addition to the explanatory features of existing technology acceptance models such as UTAUT2 for the acceptance and diffusion of AI technologies, it is crucial to explore new fundamental variables specific to AI technologies and their contextual conditions. This exploration is essential for the development of new academic research frameworks. These studies are also important for segmenting AI users and identifying the factors that influence their behaviour (Cabrera-Sánchez et al., 2021).

In recent years, research on technology acceptance and diffusion related to theoretical studies on chatbots has been conducted in different contexts and methods to address the aforementioned gap. In a study conducted by Cabrera-Sánchez et al. (2021) using a survey method, they showed that performance expectancy and hedonic motivation, key factors of the UTAUT2 model, are effective in behavioural intentions to use AI applications. In addition, they have indicated that, besides the UTAUT2 factors influencing behavioural intention towards the use of AI applications, technology fear and consumer trust factors are also effective.

Gatzioufa and Saprikis (2022), in their review of research on chatbots and user adoption intentions, found that e-surveys are predominantly used in various areas of chatbot adoption research. In their studies on chatbots, they found that the UTAUT, UTAUT2, and TAM approaches are commonly used. In terms of intentions to use chatbots, they highlighted that perceived usefulness was the most influential factor, followed by performance expectation, trust and attitude factors. Factors such as effort expectation, habit, perceived entertainment, perceived ease of use and social impact were also observed. These factors are related to the technology acceptance frameworks. The factors considered in the aforementioned study, along with the publication numbers indicating direct and indirect relationships with chatbot usage intention, are shown in Table 1.

Table 1

Factors influencing intention

Constructs/Factors	Number of publications indicating directly affecting chatbot intention-adoption	Number of publications indicating indirectly affecting chatbot intention-adoption
Performance expectation	5	
Effort expectation	3	
Habit	3	
Perceived benefit	6	1
Perceived pleasure	3	1
Perceived ease of use	3	2
Trust	5	1
Privacy concerns	1	
Perceived humanity	2	
Perceived completeness		1
Perceived ease	1	
Personal novelty	1	

Constructs/Factors	Number of publications indicating directly affecting chatbot intention-adoption	Number of publications indicating indirectly affecting chatbot intention-adoption
Attitude	4	1
Social impact	3	
Facilitating conditions	2	
Anthropomorphism	2	
Reliability	1	
Sensitivity	1	
Concreteness	1	
Tendency	1	
Perceived intelligence	1	
Perceived value	1	
Communication style		1
Hedonic motivation	1	
Price value	1	

Source:(Gatzioufa & Saprikis, 2022).

In recent years, studies on the acceptance of technology have been increasingly conducted, particularly in the general category of AI-supported chatbots, including examples such as *ChatGPT*, which target general users. In this regard, Foroughi et al. (2023) evaluated the impact of factors from the UTAUT2 framework on students' intention to use *ChatGPT*, an example of a chatbot for general users, during the learning process. We used two different analytical approaches, namely partial least squares (PLS) and fuzzy set qualitative comparative analysis (fsQCA). They found that performance expectancy, effort expectancy, hedonic motivation and perceived learning value positively influenced the intention to use *ChatGPT*. In addition, using the fsQCA approach, they highlighted that individual differences meant that a comprehensive explanatory approach could not be achieved for all students. They suggested that the effect could be explained by a combination of factors from the UTAUT2 framework.

In his research on university students' intentions to use *ChatGPT*, Strzelecki (2023) identified habit, performance expectancy and hedonic motivation as the most robust predictors of behavioural intentions to use *ChatGPT* among the UTAUT2 factors. He also found that the dominant determinants of usage behaviour were behavioural intentions and personal innovativeness factors.

Menon and Shilpa (2023), in their qualitative studies on *ChatGPT*, identified different sub-factors related to performance expectancy, effort expectancy, social impact and facilitating conditions in the UTAUT model. In their research, they emphasised the need for developers of large language models such as *ChatGPT* to pay particular attention to performance expectancy and effort expectancy. They also drew attention to variables such as privacy concerns, perceived interaction, perceived human touch, and regulatory factors that could influence *ChatGPT* usage behaviour. In their study, the sub-factors associated with the factors from the UTAUT model related to *ChatGPT* usage behavior, as well as the factors and associated sub-factors they proposed themselves, are listed in Table 2.

Table 2
Key factors and related sub-factors about using ChatGPT

Constructs/Factors	Sub-factors associated by Menon and Shilpa
Performance Expectation (UTAUT 1-2)	Perceived informativeness Sense of accomplishment Task accomplishment Outcome expectation Job fit
Effort Expectation (UTAUT 1-2)	Perceived ease User interface User satisfaction
Social Impact (UTAUT 1-2)	Social media influence Peer influence
Facilitating Conditions (UTAUT 1-2)	Technical support *ChatGPT* features Academic support
Hedonic Motivation (UTAUT 1-2) Price Value (UTAUT 1-2) Habit (UTAUT 1-2) Performance Expectation (UTAUT 1-2) Effort Expectation (UTAUT 1-2)	
Privacy Concerns (Menon & Shilpa, 2023)	Privacy Security
Perceived Interactivity (Menon & Shilpa, 2023)	Real-time conversation Perceived engagement No delay
Perceived Human Touch (Menon & Shilpa, 2023)	Perceived emotional touch Perceived level of intelligence
Moderating Factors (Menon & Shilpa, 2023)	Voluntariness Gender Age

Source: (Menon & Shilpa, 2023).

As can be seen, research into the adoption and diffusion of AI-based large language models such as *ChatGPT* involves the investigation of various factors and sub-factors identified in the literature, in addition to those specified in frameworks such as UTAUT (1,2). These studies used different research methods. However, the literature also considers different factors and sub-factors and uses different methods. While these studies demonstrate the explanatory power of existing theoretical models such as UTAUT (1,2), it is evident that theoretical frameworks need to be extended and reconsidered in different contexts. In conducting such research, the use of relatively new research techniques such as NLP-based topic analysis, in addition to traditional methods such as surveys and interviews, can enrich studies on the topic and provide different perspectives. Therefore, the aim of this study was to evaluate the findings of the topic analysis approach in accordance with the theoretical framework. This evaluation will not only assess the examples

of *ChatGPT* use within existing models but also propose new factors for the acceptance and use of large language models such as *ChatGPT*. In doing so, it contributes to the enrichment of research on the topic from different perspectives. Unlike other studies on the subject, this study utilizes video summaries generated by the AI application specified below for *Youtube* videos identified as relevant to the given keywords. In this way, it aims to contribute to the existing literature through data mining-based research.

Aim and methodology

Within the framework addressed by this research, there is a need for innovative approaches that utilize diverse data sources in order to go beyond the limitations of existing theoretical models related to the topic. In this context, the use of the Latent Dirichlet Allocation (LDA) method within the scope of topic analysis has been deemed appropriate to better understand the adoption processes of large language models. In this way, it becomes possible to move beyond the framework offered by the current literature and conduct more comprehensive and multidimensional evaluations. Based on these considerations, the aims of the study and the research methodology are explained in detail below.

Aim

This research aims to classify usage examples of *ChatGPT*, a general AI application, with the goal of revealing findings related to the scope of existing technology acceptance models and proposing variable suggestions that will expand these models. In line with these objectives, conducting an LDA analysis from the perspective of computational social sciences was preferred. The computational social sciences perspective offers an interdisciplinary methodological approach that facilitates the understanding of social dynamics in social science research through large-scale data analysis and machine learning methods (Lazer et al., 2009). LDA analysis, which can be evaluated within this framework, is a widely used topic modeling technique aimed at discovering hidden themes in large text datasets and has an increasing level of use in social media research (Blei et al., 2003; DiMaggio et al., 2013). Therefore, an LDA analysis was conducted in alignment with the research objectives. The research questions identified for this study are as follows:

RQ1: In which main areas can usage examples related to *ChatGPT* be classified?

RQ2: How can the factors and sub-factors associated with technology acceptance models in the literature be associated with *ChatGPT* usage examples?

RQ3: What variables or factors, which can be identified through the analysis of usage examples, contribute to expanding technology acceptance models?

In the context of answering these research questions, the reason for choosing the LDA method within the scope of topic analysis is that it is a widely used probabilistic approach for uncovering latent themes in large and unstructured text data. This method assumes that each document is composed of a mixture of topics, and each topic represents a distribution of specific words (Blei et al., 2003). In the literature, LDA analysis has been used particularly to analyze social media posts, comments, and discussions, enabling the identification of user concerns, motivations, and behavioral patterns (DiMaggio et al., 2013; Zhao et al., 2011). Within the scope of this research, LDA analysis was preferred in order to present a different perspective from the existing literature and because the data examined consists of unstructured text content.

Method

In this study, the most viewed videos about *ChatGPT* usage on the *Youtube* platform will be examined and the usage examples presented in this area will be classified under specific themes and headings using a topic analysis approach. Topic analysis is a systematic data analysis method used in qualitative research to make sense of themes or topics. This method, while showing similarities to discourse, content, and thematic

analysis techniques used in qualitative research, primarily aims to identify patterns and emerging specific themes in broad and unstructured texts such as social media content, interview transcripts, and video descriptions (Vaismoradi et al., 2016). Additionally, topic analysis is an exploratory and contextually rich form of analysis that enables the discovery of meanings and structures within the entire dataset (McCaslin & Scott, 2003). Especially in analyses conducted on social media platforms, topic analysis is important for classifying user experiences and trends (Rodriguez & Storer, 2020).

Data collection

To collect the data for this research on the *Youtube* platform, the search terms '*ChatGPT* usages' and '*ChatGPT* usage examples' were identified. Python and the *Youtube* Application Programming Interface (API) were used to obtain a consolidated list of the results for the identified keywords. By default, the *Youtube* API lists 'relevant' videos in search queries. The algorithm created by *Youtube* to rank relevant videos considers various user interaction factors, including textual keywords, view count, like/dislike ratios, number of comments, channel authority, upload date, and user preferences (Zhao et al., 2011). In this study, it was deemed appropriate to examine the videos identified as 'relevant' by the *Youtube* API algorithm based on keywords. The inquiry was conducted on July 22, 2023.

Individual queries were made for each keyword, and lists of 50 video records were obtained for each keyword. Due to the limitations of the *Youtube* API used to collect the data, only a maximum of 50 video records could be obtained for each keyword. These lists were then examined individually to identify overlapping video records between the two queries. Finally, a consolidated set of video information was obtained that included overlapping video records and records that were unique to each query. The final list contained a total of 77 video information records. The *Youtube* videos' IDs and titles are provided in Appendix 1.

After the creation of the bulk video information record, the English summary of each video in the list was generated in the *ChatGPT* application using the '*ChatGPT* for *Youtube*' Chrome browser extension. There is no information on the application's website or documentation regarding the specific *ChatGPT* model it uses; it is only stated that the application operates with *ChatGPT* support. Such third-party applications generally tend to keep the AI models they use confidential (Ali et al., 2023). The video summaries generated by the mentioned application consist of two sections: 'Summary' and 'Highlights.' The application produced the video summaries in English. Each video summary was then merged with the consolidated video information record in an Excel program, and a data file was created in the CSV format. The 'Summary' and 'Highlights' fields in the generated data file were used as research data, representing the summaries of the respective videos. The reasons for selecting video summaries include their direct relevance to the researched topics and their relative cleanliness from textual structures that could introduce noise into the analysis, such as sentence structures containing links. This facilitates the text preprocessing process, aiming to access more content related to various topics.

Data pre-processing

In various natural language processing tasks, such as topic analysis, pre-processing is first performed to obtain only relevant data and eliminate irrelevant data (Indurkhya & Damerau, 2010a). In this context, various pre-processing steps were taken to prepare the data for analysis before the actual analysis. First, record fields such as record number and video ID that are not relevant to the analysis were excluded from the analysis data in the created data file. Texts in the areas covered by the research were first rid of punctuation marks. Later, the 'summary' and 'highlights' fields to be analysed were merged into a single list. Stopwords to be excluded from the merged list of data were removed. When determining the stopwords to be excluded,

stopwords specific to the English language, as defined in the nltk library, were consulted. In addition to the stopwords list predefined for the English language, stopwords specific to this research, which are frequently repeated in the data and may overshadow topic modelling, such as 'chat,' 'gpt,' '*ChatGPT,*' 'openai' and 'ai' were added.

Data analysis

The LDA algorithm, a topic modeling algorithm in the Python programming language, was used for the identification and analysis of specific titles from the 'Summary' and 'Highlights' sections of a generated data file containing video summaries. LDA is a statistical model based on a structured probability distribution that identifies possible meaningful topic titles in multiple documents (Blei et al., 2003). LDA is one of the most popular algorithms used in scientific research for topic modeling and, due to its probability-based nature, has the capability to reveal hidden connections that cannot be discerned solely by examining frequencies (Kang et al., 2019).

LDA assumes that the documents comprising the dataset (in this research, each video summary) are mixtures of hidden topics represented as 'bags of words.' The LDA model interprets the dataset or corpus as displaying a specific set of topics, and each document within the dataset is considered a probabilistic mixture of these topics. It is acknowledged that specific groups of words tend to be associated with specific topics (Praveen et al., 2021). LDA identifies word clusters related to topics within a dataset, but the model does not interpret the meaning of these topics (Parker et al., 2023). LDA analysis provides instrumental convenience for researchers in determining topics.

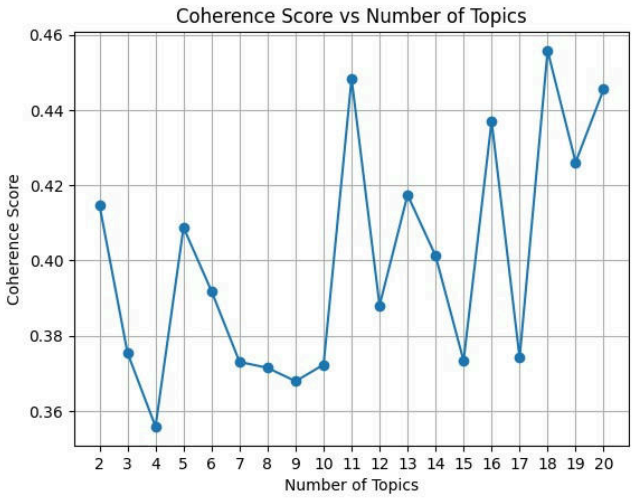
The 'gensim' library was used for applying LDA analysis to the data within the scope of the research. The Gensim library is a Python module developed for processing unstructured textual data using unsupervised machine learning algorithms, such as LDA (Gensim, 2023). When determining the number of topics in the LDA analysis, both simplicity and interpretability should be considered (Mankad et al., 2016). For this purpose, different iterations (repetitions) of modeling were performed on the dataset used in the research. Multiple LDA models were created for each iteration number (25, 50, 100, 120). Experimental studies have shown that more reliable results can be produced in LDA analyses with high iteration numbers (Wallach et al., 2009). Therefore, in this study, the number of iterations was set to 100 as the most appropriate value to ensure both reliability and interpretability. The number of iterations was set to 100 as the most suitable for simplicity and interpretability in this study. In other iterations, issues such as insufficient topic count or having multiple general categories within the same topic scope were observed.

Findings

For the LDA modeling with the specified number of iterations (100) in the research, a coherence score analysis was conducted using cross-validation to determine the optimal number of topics. Cross-validation coherence score analysis is a method for calculating the optimal number of topics in a dataset. In this method, for each increased number of topics k, a topic model is run, and a coherence score is generated, which is then compared across different numbers of topics. The coherence score here is a measure of how accurately topics can be interpreted by humans, and it is recommended to generate and report a coherence table as a measure of model fit in LDA analyses (Parker et al., 2023). The data related to the coherence score analysis is shown in Figure 1 below.

Figure 1

Coherence scores by the number of topics



As can be seen in the graph above, the highest coherence scores were determined for 18 topics. In order to ensure both diversity and clarity of the topics for this research, it was decided to model the topics into 18 titles. In the code script where the number of topics was determined, the LDA algorithm was applied to the research data in CSV format and the top ten most relevant keywords were determined for each topic. The identified titles were further examined and grouped under 6 general themes. The themes and the number of topics associated with them are as follows:

1. Content creation (9 titles)
2. Coding (2 titles)
3. Language support (2 titles)
4. Legal and tax consultancy (2 titles)
5. Earning money (2 titles)
6. Organisation and planning (1 title)

The topics, their descriptions and the themes to which they belong, based on the keywords identified by the LDA analysis, are shown in Table 3.

Table 3

Themes and topics emerging from the LDA analysis

Number	Theme	Topic	Definition	Keywords
1	**Content creation**	Video editing skills	Exploration of what can be done with AI in video processing.	prompts, tool, video, capabilities, artificial, intelligence, solutions, learn, explored, ebook
2	**Content creation**	Content and data generation	Content and data generation for different environments.	content, generate, data, get, video, create, speech, articles, Youtube, blog,
3	**Content creation**	Homework assistant	Limitations related to homework solutions and homework assistance.	want, homework, drawbacks, constraints, crypto, documents, explanation, parking, market, budget,
4	**Content creation**	Prompt assistant	Assistant for various purposes such as content browsing and writing prompts.	prompts, like, browsing, writing, responses, users, feature, per, content, various,

Number	Theme	Topic	Definition	Keywords
5	**Content creation**	Creating original content for niches	Creating original content and ideas for specific niches.	writing, like, specific, potential, create, content, prompts, various, ideas, generate,
6	**Content creation**	Content ideas assistant	Providing effective ideas on various topics.	various, ideas, content, including, effectively, interview, generate, help, writing, generating,
7	**Content creation**	Productivity tool	Productivity tool for various areas such as email and video.	tools, email, video, various, productivity, Youtube, time, articles, using, quick,
8	**Content creation**	Effective academic writing assistant	Assistant tool for writing skills in various environments like college.	writing, guide, college, communication, using, prompts, utilize, outline, literature, powerful,
9	**Content creation**	Content for freelancers	Tips for content creation for freelancers, such as video content.	content, generating, freelancers, video, creating, using, like, bard, create, make,
10	**Coding**	Code generation	Assistant for writing and understanding the code.	code, users, make, write, generate, learn, death, responses, prompt, understand,
11	**Coding**	Coding tool	Tool for coding and formula generation for different platforms.	tool, powerful, using, code, create, excel, instructions, learn, free, formulas,
12	**Language support**	Language assistant	Free language parsing assistant based on natural language processing.	language, understanding, using, free, chatbot, time, model, may, provides, access,
13	**Language support**	English content creation assistant	Creating original interactive content in English.	English, create, using, originality, interact, prompts, grammar, may, text, content,
14	**Legal and tax consultancy**	Legal operations assistant	Assistance in legal matters related to fields such as business areas.	legal, potential, case, business, api, lawyers, tasks, practice, like, users,
15	**Legal and tax consultancy**	Tax planning	Effective tax planning and advice on property transactions.	tax, time, like, get, may, stamp, duty, land, based, video
16	**Earning money**	Investment assistant	Advice on investments in various contexts such as loss, risk, and environmentalism.	create, andre, invest, language, loss, friendly, investments, eco, affiliate, risky,
17	**Earning money**	Job opportunities	Online Job Opportunities and Income Generation Strategies.	money, using, online, businesses, make, content, technology, create, creating, yet
18	**Organisation and planning**	Task planner	Personalized task planning assistant.	task, like, plus, plans, personalized, access, advanced, coding, various, content,

Note: Keywords related to each title have been sorted from the highest to the lowest relevance scores.

In the LDA analysis, in some cases, word groups that may be considered unrelated to the generated themes and topics can emerge. This is a natural limitation of the LDA analysis (Kang et al., 2019). In this regard, the word 'death' in Topic 10 and the word 'andre' in Topic 16, as shown in the table above, can be evaluated from this perspective. Since the main focus of the LDA analysis is to reveal the overall structure

of the themes and topics, such rare instances of unrelated words have not been discussed. As noted by Indurkhya and Damerau (2010b), this is a common occurrence.

The topics shown in the table above were determined on the basis of keyword relevance scores. When determining titles based on keywords, title suggestions were obtained through prompts in the *Chat-GPT 3.5* application, as shown in the example below:

> (0, [('prompts', 0.024253141), ('tool', 0.012209975), ('video', 0.011586202), ('capabilities', 0.011400484), ('artificial', 0.00919934), ('intelligence', 0.00919934), ('solutions', 0.009199154), ('learn', 0.0066850996), ('explored', 0.006188612), ('ebook', 0.006188612)]) These data include key terms ranked in descending order of relevance levels for a title identified in an LDA analysis. Considering these relevance scores, could you provide the most suitable short title and description for this topic?

The first 10 keywords for each topic were schematized using word clouds based on relevance scores, as seen in Table 4.

Table 4

Top 10 keywords for each topic

The details of the identified themes and associated titles are elaborated below.

Theme 1: Content creation

As can be seen in the table above, the largest numbers of topics are associated with the 'Content Creation' theme. These titles, when evaluated based on the scores of their associated keywords, highlight immediate support for solutions and training related to video content creation. 'Video editing skills' topic emphasizes

prompt support for solutions and training related to video content production. 'Content and data generation' topic is associated with producing and obtaining content and data in different formats for different areas. 'Homework assistant' topic focuses on *ChatGPT* support for creating assignments and emphasizes limitations related to this process. 'Prompt assistant' focuses on content generation for research, including information browsing, features, and exploring content ideas. 'Creating original content for niches' emphasizes creating content and ideas for specific niches based on users' interests and needs. 'Content ideas assistant' highlights support for generating effective ideas in various fields. 'Productivity tool' emphasizes rapid tool functionality for productivity in areas like email and video content. 'Effective academic writing assistant' can be associated with *ChatGPT*'s strong support for writing formats, especially in academic areas like university. 'Content for freelancers' highlights support for video content creation for publishers earning money as freelancers. These titles, when collectively examined, emphasize different skills and qualities related to content creation.

Theme 2: Coding

As a result of the analysis, two topics related to the second theme were identified as 'coding.' The tenth topic, 'code generation,' when evaluated based on the scores of its associated keywords, emphasises concepts such as creating, writing, learning and understanding code for users. The eleventh topic, 'coding tool,' highlights *ChatGPT*'s powerful tool support for coding or creating formulas. Keywords related to free access and learning to code are also present in this topic. In addition, the mention of the keyword 'Excel' within this title draws attention to examples of platforms that provide support for coding and formulas. In general, these titles emphasise the benefits of *ChatGPT* as a programming tool, highlighting its support for creating and understanding code.

Theme 3: Language support

As a result of the analysis, two titles related to the third theme were identified, which can be referred to as 'language support.' The twelfth title, 'language assistant' emphasises free chatbot support for understanding and using different languages. The thirteenth topic, 'English content creation assistant,' highlights support for linguistic, original and interactive content creation in English. In addition, the keyword 'grammar' in this title may also refer to support in the grammatical dimension of English language assistance. In general, these titles suggest that *ChatGPT* provides interactive support for comprehension, content creation and grammar support in different languages, with a primary focus on English.

Theme 4: Legal and accounting services

As a result of the analysis, two titles were identified in relation to the fourth theme, which can be referred to as 'legal and tax advice.' The fourteenth topic, 'legal operation assistant' emphasises support for potential situations in legal matters. The keyword 'business' in this title may be associated with situations involving business matters, while the keyword 'lawyers' may be associated with legal assistance. The fifteenth topic, 'tax planning,' may be related to various financial recommendations regarding tax planning. In general, these topics suggest that *ChatGPT* provides advisory support in various legal matters and tax processes, with an emphasis on assistance in potential legal situations and financial recommendations for tax planning.

Theme 5: Earning money

As a result of the analysis, two titles were identified in relation to the fifth theme, which can be referred to as 'earning money.' The sixteenth topic, 'investment assistant' emphasises the support of investment strategies. Within the context of the keywords, the content of these videos may include features of environmentally

friendly investments and information about potential risks. The seventeenth topic, 'job opportunities,' highlights support for earning an income in the online environment. This support may relate to topics such as how to earn money online, how to be successful on online platforms and how to create content to earn money. In general, these topics suggest that some of the analysed videos are related to *ChatGPT*'s video content on investment, job opportunities and making money.

Theme 6: Organisation and planning

Based on the analysis, the sixth theme has been identified as 'organisation and planning' and can be referred to topic as 'task planner.' The topic is related to providing personalized task and planning advice, with a focus on video content that demonstrates the use of *ChatGPT*. The examined video content under this title may contain examples of how to use *ChatGPT* for task management and personalised plans to handle various tasks.

Evaluation of the identified themes and topics within the framework of the technology acceptance model factors

For the assessment of the themes and topics identified in relation to the conducted LDA analysis, factors and sub-factors related to models for technology acceptance, determined through a literature review, are presented in Table 5.

Table 5

The factors and sub-factors identified to evaluate the themes and topics

Constructs/Factors	**Sub-factors associated by Menon and Shilpa**
Performance Expectation (UTAUT 1-2)	Perceived Informativeness
	Sense of Accomplishment
	Task Accomplishment
	Outcome Expectation
	Job Fit
Effort Expectation (UTAUT 1-2)	Perceived Ease
	User Interface
	User Satisfaction
Social Impact (UTAUT 1-2)	Social media influence
	Peer influence
Facilitating Conditions (UTAUT 1-2)	Technical Support
	ChatGPT Features
	Academic Support
Hedonic Motivation (UTAUT 1-2) Price Value (UTAUT 1-2) Habit (UTAUT 1-2)	
Privacy Concerns (Menon & Shilpa, 2023)	Privacy
	Security
Perceived Interactivity (Menon & Shilpa, 2023)	Real-time Conversation
	Perceived Engagement
	No delay
Perceived Human Touch (Menon & Shilpa, 2023)	Perceived Emotional Touch
	Perceived Level of Intelligence

Constructs/Factors	Sub-factors associated by Menon and Shilpa
Moderating Factors (Menon & Shilpa, 2023)	Voluntariness
	Gender
	Age
Perceived Benefit (Gatzioufa & Saprikis, 2022)	
Perceived Humanity (Gatzioufa & Saprikis, 2022)	
Personal Novelty (Gatzioufa & Saprikis, 2022)	
Attitude (Gatzioufa & Saprikis, 2022)	
Anthropomorphism (Gatzioufa & Saprikis, 2022)	
Empathy (Gatzioufa & Saprikis, 2022)	
Tendency (Gatzioufa & Saprikis, 2022)	

In determining the factors and sub-factors presented in the table above, various elements from different technology acceptance models discussed in the studies conducted by Gatzioufa and Saprikis (2022) and Menon and Shilpa (2023) were taken into consideration. Some factors mentioned in the study by Gatzioufa and Saprikis (2022) were added to the table, while others were excluded. The factor 'perceived pleasure' has been excluded from the list as it is associated with the 'hedonic motivation' factor. Furthermore, 'perceived ease' was listed as a sub-factor of the 'effort expectancy' factor, 'trust' was listed as a sub-factor of the 'privacy concerns' factor, and 'perceived intelligence' was listed as a sub-factor of the 'perceived human touch' factor. Additionally, the study by Gatzioufa and Saprikis (2022) did not directly specify the relationship between "perceived completeness" and "communication style" and the acceptance and diffusion of chatbot usage. Therefore, these factors were not included in the list. The factor "tangibility" referring to the presence of physical material such as a computer or phone (Zumstein & Hundertmark, 2017), that enables communication with *ChatGPT*, was not included in the list, as in this study, examples of *ChatGPT* usage can be assumed to cover this factor by default.

The factors and associated sub-factors mentioned in the above table, which can be associated with the themes and titles related to *ChatGPT* usage examples examined within the scope of this study, are provided in Table 6.

Table 6

Factors and sub-factors associated with the themes and topics

No	Theme	Topic	Factors	Sub-factors
1	**Content creation**	Video editing skills	Performance Expectation (UTAUT 1-2)	Perceived Informativeness
2	**Content creation**	Content and data generation	Effort Expectation (UTAUT 1-2)	Sense of Accomplishment
3	**Content creation**	Homework assistant	Social Impact (UTAUT 1-2)	Task Accomplishment
4	**Content creation**	Prompt assistant	Facilitating Conditions (UTAUT 1-2)	Outcome Expectation
5	**Content creation**	Creating original content for niches	Hedonic Motivation (UTAUT 1-2)	Job Fit
6	**Content creation**	Content ideas assistant	Price Value (UTAUT 1-2)	
7	**Content creation**	Productivity tool	Perceived Interactivity (Menon & Shilpa, 2023)	Perceived Ease
8	**Content creation**	Effective academic writing assistant	Personal Novelty (Gatzioufa & Saprikis, 2022)	User Satisfaction
9	**Content creation**	Content for freelancers	Empathy (Gatzioufa & Saprikis, 2022)	

No	Theme	Topic	Factors	Sub-factors
10	**Coding**	Code generation		Technical Support
11	**Coding**	Coding tool		*ChatGPT* Features
12	**Language support**	Language assistant		Academic Support
13	**Language support**	English content creation assistant		
14	**Legal and tax consultancy**	Legal operations assistant		Real-time Conversation
15	**Legal and tax consultancy**	Tax planning		Perceived Engagement
16	**Earning money**	Investment assistant		No delay
17	**Earning money**	Job opportunities		
18	**Organisation and planning**	Task planner		Perceived Level of Intelligence

Upon examining the analysis results, themes and topics related to the examples of *ChatGPT* usage given in the table above, and the correlation table between the factors determined through the literature review in the framework of technology acceptance, it can be concluded that the themes and titles are generally associated with the five key factors of the UTAUT (1-2) frameworks. These factors include performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, and price value. The themes and titles identified may be related to factors such as *ChatGPT*'s high performance, its ability to accomplish tasks with minimal effort, its facilitation of processes, and its direct or indirect cost reduction, resulting in enjoyable user experiences.

Gatzioufa and Saprikis (2022) conducted a study on perceived interactivity, personal novelty and empathy factors beyond the UTAUT (1-2) frameworks. This study suggests a possible relationship between themes, topics, and these factors. The quality and nature of the interactive responses provided by *ChatGPT* in the examples of its usage to achieve specific goals can be associated with the perceived interactivity factor. Personal novelty refers to the extent to which individuals adopt new ideas compared to others in their social environment (Rogers & Shoemaker, 1971). This study examines the personal novelty of *Youtube* content creators in relation to their use of *ChatGPT*, as well as the personal innovativeness of the video audience in relation to *ChatGPT* usage. In addition, the usage examples presented can be related to themes and topics because of the innovative tasks that can be performed with *ChatGPT*. The empathy factor can be correlated with how well users perceive and respond appropriately to user expectations regarding the goals specified in the examples of *ChatGPT* usage. For example, a user seeking assistance for legal matters from *ChatGPT* may expect *ChatGPT* to empathize to some extent by evaluating how well it understands the problem the user wants to express.

The themes and topics identified through the LDA analysis can be associated with the sub-factors related to the UTAUT (1-2) factors, as outlined by (Menon & Shilpa, 2023). These sub-factors include perceived informativeness, sense of accomplishment, task accomplishment, outcome expectation, job fit, perceived ease, user satisfaction, technical support, *ChatGPT* features, academic support, real-time conversation, perceived engagement, no delay, and perceived level of intelligence.

Many of the identified themes and topics are related to informativeness, emphasizing the success of examples, the ability to produce desired outcomes, ensuring job relevance according to the purpose of use, ease of use in operations, and consequently, satisfaction. The themes are also associated with technical and

academic support that can be obtained based on *ChatGPT* features, perceived intelligence for accomplishing tasks, quick responses to questions, and ensuring user satisfaction.

Other factors associated with technology acceptance models that can be identified from the themes and topics

To answer research question RQ3, 'What variables or factors, can be identified through the analysis of usage examples, contribute to expanding technology acceptance models?' inferences can be made about certain factors or sub-factors that may be associated with technology acceptance models based on the themes and topics identified through the LDA analysis conducted in line with the objectives of the study. Some of these factors or sub-factors are shown in Table 7 below.

Table 7

The recommended factors or sub-factors associated with the identified themes and topics.

Theme	Factors or sub-factors
Content Creation	• Work motivation
Coding	• Perceived autonomy
Language support	• Status motivation
Legal and tax consultancy	• Perceived opportunity
Earning money	• Perceived competence
Organisation and planning	

The factors or sub-factors mentioned in the table above regarding the acceptance of technology in the context of *ChatGPT* are proposed based on the themes and topics revealed through the analysis of usage examples on the *Youtube* platform.

The factor of work motivation is an impulse that requires an individual to consciously or unconsciously take action towards a goal (Riyanto et al., 2021). The work motivation factor is proposed to be related to the desire for productivity in activities such as content creation, computer program development, production for digital or academic purposes in various languages, income-generating activities, and activities directed towards organizations, based on the themes and topics identified in the research results. The concept of performance expectancy, a fundamental factor in UTAUT frameworks, can be considered to be related to work motivation. (Iis et al., 2022) have stated that work motivation is a factor directly associated with achieving performance. In this context, the impact of factors related to work motivation on the acceptance and dissemination of technologies like *ChatGPT* can be discussed.

Perceived autonomy is a factor related to internal motivation. It represents an individual's freedom and ability to make their own choices (Deci & Ryan, 2000). This concept is a crucial element in the self-determination theory framework concerning human motivation (Ryan & Deci, 2017). Perceived autonomy may influence the usage and dissemination of *ChatGPT*, as it relates to users' perception that they can independently achieve their goals in their individual interests. Studies can be conducted to investigate the acceptance of technologies such as large language models, like *ChatGPT*, in alignment with frameworks related to self-determination theory and motivation.

The factor of status motivation or the desire to increase status can be suggested as a factor associated with users' intentions to enhance their social status, given that the identified themes and topics in the research are generally related to subjects such as earning money, work, and academic purposes. This factor can also be considered as a sub-factor related to hedonic motivation in the UTAUT2 framework.

The concept of perceived opportunity, proposed as a concept related to job design in some studies, is defined as the opportunities employees see in the process of designing their jobs (Van Wingerden & Niks, 2017). In this context, perceived opportunity can be suggested as a factor related to the acceptance and dissemination models of large language models, considering that the themes and topics related to usage examples in the research often focus on increasing opportunities in various fields with *ChatGPT*.

The concept of perceived competence is generally defined in the literature as individuals' perception of being competent in any domain of expertise (Boekaerts, 1991). In the context of the acceptance and dissemination of new technologies, this concept can be interpreted as users' perception of whether the technology will be competent in any domain. The perception of competence, or perceived competence, can also be considered as a concept associated with performance expectancy in the UTAUT framework. Users' perceptions of whether *ChatGPT* will be sufficient for their purposes can influence the acceptance and dissemination of this technology. It can be suggested as a factor or sub-factor since the themes and topics associated with *ChatGPT* usage examples may be related to the competencies of *ChatGPT* in specific domains.

The factors or sub-factors suggested in this research that can be associated with the acceptance and dissemination of *ChatGPT*, as identified through LDA analysis, can be examined as influencing factors in subsequent studies, and concrete data regarding their potential impacts can be presented. Research in this area can contribute rich content to the academic framework for the acceptance and diffusion of large language models like ChatGPT.

Discussion and conclusion

ChatGPT is an innovative technology in terms of the widespread use of AI technologies, serving as a specific chatbot application with a large language model. It represents a tangible example of AI usage for the general user base. Similar to other technologies, explaining the adoption and dissemination of this technology with different technology acceptance models is important for establishing the theoretical framework for the acceptance and diffusion of such large language model chatbot technologies.

Within the framework of technology acceptance theories, models such as UTAUT (1,2) are proposed, considering technological advancements and changing social conditions. These models generally identify effective factors in the acceptance and dissemination of new technologies in society, providing a conceptual framework and serving as a guide for practical applications. While existing theoretical models create the necessary framework to explain the acceptance and diffusion of different technologies in different contexts for individuals and society, these models undergo changes and developments over time based on evolving conditions and the nature of technologies. Especially in recent years, revolutionary developments in AI technologies have opened up a field that is ready for exploration in the theoretical domain, with transformative effects that extend beyond just AI. This field challenges the boundaries of existing technology acceptance models with its unique dynamics and transformative impacts on various technological developments.

ChatGPT is an AI technology that is openly accessible to the general public and has attracted significant attention from all segments since its initial release. Its ability to be directly accessible by the general user, unlike many other AI applications, and serving as an example that brings the AI usage experience to a broad audience, can be considered a significant factor in this interest. Examining how *ChatGPT* is accepted in society and how its usage spreads is necessary for a better theoretical understanding of such technologies. Additionally, research in this regard is crucial for highlighting their potentials and ensuring that users effectively benefit from these technologies. Consequently, there is a growing interest in the academic literature regarding large language models like *ChatGPT*, and various studies are being conducted in different contexts

within different technology acceptance models. In addition to the examples mentioned above, Ma et al., (2025) conducted a survey study on the intentions behind using *ChatGPT*. In their research, based on the TAM, they examined the relationships between *ChatGPT* usage behaviors and the factors of the TAM model. Kumar & Lohan (2024), in their study using the TAM framework to explore *ChatGPT* adoption among higher education students, emphasized the importance of response quality and the necessity of using *ChatGPT* within the context of critical thinking. Chen et al. (2024), in their study on the use and diffusion of AI-powered chatbots among scientists, employed the UTAUT framework and pointed out that there may be additional factors influencing chatbot usage beyond those identified by the UTAUT model. Lee et al. (2024), in their online survey study evaluating the intentions to use *ChatGPT* through the UTAUT framework, found that in addition to the core UTAUT factors—performance expectancy, effort expectancy, social influence, and facilitating conditions—perceived risk and emotional factors also play a significant role in predicting positive attitudes and behavioral intentions toward *ChatGPT*. Similar to these studies, many others aim to understand the adoption and diffusion of large language models such as *ChatGPT* across various user groups.

In this study, the goal is to evaluate the subject within the framework of technology acceptance models, particularly focusing on practical usage examples of *ChatGPT*. The highly viewed videos of *Youtube* broadcasters, who are early and innovative users of this technology, have been selected as a source to identify practical usage examples. In contrast to many other studies on the subject (Chen et al., 2024; Gatzioufa & Saprikis, 2022; Kumar & Lohan, 2024; Lee et al., 2024; Ma et al., 2025; Menon & Shilpa, 2023), this research adopts a topic analysis-based approach to examine the examples from a practical perspective. The identified themes and topics from the research results have been classified into usage examples discussed in highly viewed *Youtube* videos the subject. The findings were evaluated within the framework of the technology acceptance models determined through a review of the literature.

As a result of the examinations, it has been evaluated that the identified themes and topics related to *ChatGPT* usage examples can be associated specifically with UTAUT (1,2) models, including performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, and price value factors. Additionally, it has been considered that other factors mentioned as sub-factors in the study by Menon and Shilpa (2023) related to these UTAUT (1,2) factors can also be associated with the themes and topics within the scope of the research. Factors considered in other technology acceptance models, such as perceived interactivity, personal novelty, and empathy, were also evaluated to be related to the identified themes and topics. Exploring the relationships between concepts related to the use of large language models like *ChatGPT* and the factors mentioned here on the impact dimension is the subject of future studies.

In the context of this study, some factors or sub-factors are suggested to extend the existing technology acceptance models beyond general factors for the theoretical framework, especially in the context of large language models like *ChatGPT*. These include work motivation, perceived autonomy, status motivation, perceived opportunity, and perceived competence. These factors can be considered in the creation of new theoretical models or in expanding the scope of existing technology acceptance models through further academic research. In addition, other studies may reveal different factors associated with the identified themes and topics in this study, and the potential effects of these factors can be explored. This study relies solely on video summaries generated by the AI application as an innovative method, leveraging the advantage of such automated summarization tools in processing large datasets quickly and efficiently. However, this also represents a limitation of the study. In the future, these limitations can be addressed through studies that combine automated summarization tools with the support of manual human coders. The assessments presented in this study are open to discussion and critique.

This study, which identifies and evaluates themes and topics associated with *ChatGPT* usage examples based on technology acceptance models, will be beneficial in reconsidering the theoretical framework of AI applications like *ChatGPT*.

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Appendix | Ek

Appendix 1

The YouTube *video IDs and titles of the videos used in this study.*

Video ID	Title
MnDudvCyWpc	How to use ChatGPT to easily learn any skill you want
MG8dTn08Mjk	Unleashing the Future: Harnessing AI for Marketing Success!
lpC-xBXsAGw	ChatGPT Tools That Make You a PRODUCTIVITY GOD
Hpl1UhsvDh4	How to use AI, OpenAI, Chat GPT
LYiTHzyP-Xw	ChatGPT AI Can Do Your ASSIGNMENTS! 👀 | Ishan Sharma #shorts
iZDflpwN5as	Why You Don&39t Want To Use ChatGPT To Do Your Homework
bAaAA5K9uqA	How to use chatgpt 4 for free | How to use chatgpt | chatgpt 4 free access | What is chatgpt | AI
t1-5z0HgkuE	How to Use Chat GPT by Open AI - ChatGPT Tutorial For Beginners
2nCoZB6-lao	Open AI CEO Sam Altman | Chat GPT | #mangeshshinde #shorts
B5dAqzB45n0	Chat gpt 4 premium in free of cost with this trick 🤩 #shorts
40Kp_fa8vIw	What is ChatGPT and How You Can Use It
fw16D23TjJI	How To Jailbreak ChatGPT & Make It Do Whatever You Want 😱
J5ArSJfQng0	Use ChatGPT to Make $320 Per Day | Make Money with AI
oqSYljRYDEM	How to Use ChatGPT to Ruin Your Legal Career
f-eDFsnzNh8	Learn English with ChatGPT - Use AI as your English teacher for free
_5UHsFdHcE8	Chat GPT Banned in College? | Use this website !
yR27J-QUx2o	ChatGPT 4 Tutorial: How to Use Chat GPT 4 For Beginners 2023
QA6ebemXDwE	The 7 Best AI Businesses to Start with Chat GPT
wLk2xRzhbjk	ChatGPT Tutorial - for all College students & Coders
m6K3XTFdaHE	10 Secret GPT-4 Tips And Tricks (How To Use GPT-4)(GPT-4 Tutorial)
pspsSn_nGzo	10X Your Code with ChatGPT: How to Use it Effectively
rR_2ISH33ZA	Chat Gpt To Make Money Online || How To Use Chat Gpt To Make Money Online
nY234RoQeHw	I Asked ChatGPT To Make Me As Much Money As Possible
i4eZOT6FYg0	Is the NEW ChatGPT Plus Worth It? (OpenAI Chat GPT Plus vs Free Review)
Aa83vRghue4	5 ideas for your own AI grift with ChatGPT
AtvTwWXSCA4	5 Ways to Use Chat GPT to Make Money Online Today as a Freelancer
JqCfISbtxX8	6 Side Hustles That Pay +$850 Per Day Using Chat GPT (OpenAI)
3x95mw35dJY	What GPT-4 Can Really Do
bv6w8gzkGzY	Can Chat GPT (AI) Reduce My UK Stamp Duty Land Tax?
5IhiaYlijVE	Chat GPT Examples - 10 SERIOUSLY USEFUL Things YOU Can do with AI!
4jTJZ-ojUhc	Chat GPT: 6 Examples which will Change Your Life
pS2m7kP_ezQ	OpenAI&39s ChatGPT is INSANELY USEFUL! 🤯 | Ishan Sharma #shorts
k59FJ3NzD7s	REAL Uses of ChatGPT As A Developer | 12 Practical Examples
EVyZFmABib4	ChatGPT Tutorial (for Beginners): How to Use EVERY Chat GPT Command Step-by-Step
cINMjr-159o	What is ChatGPT? Chat GPT Explained (with AI chatbot examples)
8xiu-mbEHuI	Use Chat GPT For Social Media Captions #shorts
ON9XPDE-2NA	7 Chat GPT Prompts to Improve Your Everyday Life
bnRd8Ktt8ek	What Can Chat GPT do For the Average Person?
dK5TUET1vyM	How to Use Chat GPT to Write a Speech - Tutorial with Examples

Video ID	Title
HfuUTQfpBSo	Write Your Literature Review With CHAT GPT (THE ETHICAL WAY)
yHpjW6dhNbM	Chat GPT Examples - 10 More Fabulous Ways to Use Ai (Part 3)
K7z0jlE61IM	Don&39t use ChatGPT until you&39ve watched this video!
ka1Pqk2o3tM	The ChatGPT Playbook of EPIC Prompts
kQPUWryXwag	Bring ChatGPT INSIDE Excel to Solve ANY Problem Lightning FAST
Dl_OO1qwqTE	The Best Examples Of What You Can Do With ChatGPT
X3araoaO7Lg	The Difference between GPT-3.5 and GPT- 4 #openai #chatgpt
o5MutYFWsM8	What is ChatGPT? OpenAI&39s Chat GPT Explained
qg5GNh3mn2o	Biggest SaaS Opportunity in 2023: ChatGPT API (OpenAI, FeedHive, GPT-4)
oTY8egmo7us	How to Use Agent GPT - ChatGPT as AutoGPT
XtPGKvTTlxU	How to Use ChatGPT? 🔥 Chat GPT Examples
ssFV8GrnLpI	ChatGPT&39S New &39BROWSING UPDATE&39 Surprises Everyone! (Access Internet, Plugins + Examples)
FekID4qex-c	Using ChatGPT-3 to Make YouTube Videos in Minutes (FULL GUIDE)
MIdv9ku1TfU	Did ChatGPT Become Useless Already?!
f-_78a0HXCY	Ben Shapiro Breaks AI Chatbot (with Facts & Logic)
-fopYsgFdzc	10 ChatGPT Life Hacks - THAT'LL CHANGE YOUR LIFE !!
3KC_xJwo9FM	The Best Uses for ChatGPT
wBmfL4PEliY	4 Ways Chat GPT Can Improve Your Everyday Life
AXn2XVLf7d0	How To Use Chat GPT by Open AI For Beginners
fgjoF97gdjQ	10 Best ChatGPT Examples, Prompts & Use Cases (Chat GPT Demo & Tutorial)
k0xsloC86hk	5 Secrets to Writing with Chat GPT (Use Responsibly)
Gaf_jCnA6mc	ChatGPT Tutorial: How to Use Chat GPT For Beginners 2023
jHv63Uvk5VA	Complete ChatGPT Tutorial - [Become A Power User in 30 Minutes]
Zp2fTlkUTwc	15+ Unique & Powerful Use Cases Of ChatGPT 🤖 🤯
-IBxIXBaei8	ChatGPT Tutorial - How to use Chat GPT for Learning and Practicing English
i7Q9HhWT4Iw	CHAT GPT VS BARD AI 🔥 |#shorts #tamil
nWvCd8lC4_Q	How to use Chat GPT for Learning and Improving English
HGDxu3kPErs	Advanced ChatGPT Prompt Tutorial (10X Your Productivity With AI)
os-JX1ZQwIA	ChatGPT Guide: 10x Your Results with Better Prompts
sTeoEFzVNSc	ChatGPT Tutorial for Developers - 38 Ways to 10x Your Productivity
JTxsNm9IdYU	ChatGPT Tutorial - A Crash Course on Chat GPT for Beginners
RdAQnkDzGvc	Testing the limits of ChatGPT and discovering a dark side
JYtZ2zsdE_s	10X Your Excel Skills with ChatGPT 🚀
3ao7Z8duDXc	Chat GPT Explained in 5 Minutes | What Is Chat GPT ? | Introduction To Chat GPT | Simplilearn
21bXQDXSxYs	How ChatGPT Can Help With Your Complex Excel Spreadsheets
kRpZW-rVOW4	How To Make Money With Chat GPT In 2023 (For Beginners)
Ddkg3x6YUwk	Use Chat GPT content on your Blog with this technique #chatgpt #contentwriting #digitalmarketing
IG1izWfgG4I	I Found The 400 Most Useful Chat GPT Prompts