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Innovation without Resistance? A Critical Examination of Applying Innovation Resistance Theory to the Case of Generative AI ChatGPT

¿Innovación sin Resistencia? un Examen Crítico de la Aplicación de la Teoría de la Resistencia a la Innovación al Caso de la IA Generativa ChatGPT

I. INTRODUCTION

Artificial intelligence (AI) stands out as one of today's key advancements. Every day, new AI developments emerge, and we strive to stay updated with these innovations across various fields. Can we regard these AI advancements as innovations in their own right? Or should we view AI merely as a tool for driving innovation? Both ways are correct. Essentially, AI serves as a technology integrated into the innovation process. Innovation can be understood as the creation and execution of novel products, ideas, and processes. In essence, artificial intelligence is a technology employed within this framework of innovation.

AI in the business domain is becoming inevitable, as a company's ability to embrace technological innovations impacts its competitiveness (Ikhsan et al., 2025). It is crucial to determine how businesses can leverage the economic potential of AI alongside governance solutions (Chhillar & Aguilera, 2022), since there are numerous advantages, such as quicker automation, reduced costs, and increased flexibility (Senathirajah et al., 2024).

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EXECUTIVE SUMMARY

Artificial intelligence (AI) has gained significant attention since the launch of ChatGPT in November 2022. Since then, discussions and writings regarding various applications and benefits have proliferated. Recent literature suggests that, while the technology has become widely available and offers numerous benefits, its adoption rate has not fully aligned with initial expectations. Thus, it is particularly important to examine the challenges and barriers that are most significant in the adoption of Generative AI. This paper employs quantitative research, consisting of a survey conducted among first-year business students. A total of 314 responses were received. We employed multivariate analysis to explore our central research question: how Innovative Resistance Theory (IRT) applies to the adoption of ChatGPT among future business leaders. IRT was introduced back in 1989, and since then, a considerable amount of quantitative research has confirmed the significance of usage, value, tradition, risk, and image barriers in the adoption of various innovations. Our study, focusing on members of Generation Z, both challenged and extended the theory. Notably, we found that the value and usage barriers were not empirically distinguishable, and the image barrier did not emerge as a significant factor. These findings suggest meaningful deviations from IRT in the context of Gen Z, offering fresh insights into how this emerging workforce engages with disruptive technologies like ChatGPT.

RESUMEN DEL ARTÍCULO

La inteligencia artificial (IA) ha ganado una atención significativa desde el lanzamiento de ChatGPT en noviembre de 2022. Desde entonces, han proliferado las discusiones y publicaciones sobre sus diversas aplicaciones y beneficios. La literatura reciente sugiere que, aunque la tecnología se ha vuelto ampliamente accesible y ofrece numerosas ventajas, su tasa de adopción no ha estado completamente alineada con las expectativas iniciales. Por ello, es especialmente importante examinar los desafíos y barreras más relevantes en la adopción de la IA generativa. Este artículo emplea una investigación cuantitativa, consistente en una encuesta realizada a estudiantes de primer año de negocios. Se recibieron un total de 314 respuestas. Se utilizó un análisis multivariante para explorar nuestra pregunta central de investigación: ¿cómo se aplica la Teoría de la Resistencia a la Innovación (IRT, por sus siglas en inglés) a la adopción de ChatGPT entre futuros líderes empresariales? La IRT fue introducida en 1989 y, desde entonces, una considerable cantidad de investigaciones cuantitativas han confirmado la importancia de las barreras de uso, valor, tradición, riesgo e imagen en la adopción de diversas innovaciones. Nuestro estudio, centrado en miembros de la Generación Z, desafía y amplía la teoría. En particular, descubrimos que las barreras de valor y uso no eran empíricamente distinguibles, y que la barrera de imagen no resultó ser un factor significativo. Estos hallazgos sugieren desviaciones significativas de la IRT en el contexto de la Generación Z, ofreciendo nuevas perspectivas sobre cómo esta fuerza laboral emergente interactúa con tecnologías disruptivas como ChatGPT.

While AI first appeared in the 1950s, it truly took off with the rise of modern society, which is continuously developing innovative tools to boost economic productivity (Turkes et al., 2024). AI advancements include Generative Pre-trained Transformer (GPT) technology, particularly ChatGPT, which effectively generates human-like conversational responses. While generative AI (Gen AI) is only one facet of artificial intelligence, it stands out as the most recognized and widely used among different groups. ChatGPT, the most famous tool, has gained significant attention beyond industry sectors (Dwivedi et al., 2023). According to the authors, ChatGPT technology stands out due to its impressive capabilities (Turkes et al., 2024).

... AI in the business domain is becoming inevitable, as a company's ability to embrace technological innovations impacts its competitiveness...

Despite unquestionable protentional offered by AI, there are still some unexamined differences in its adoption (Wang et al., 2024). On the one side there are empirical research that confirm acceptance and adoption on AI, such as individuals who embrace technosolutionism and prefer AI to human managers for workplace decision-making (Nagpal et al., 2024). Similarly high adoption rate has been noted among individuals working in IT domain (Jakopec et al., 2023). On the contrary, there are some domains with limited usage, such as research on project managers, where more than half of the managers reported no usage of AI at all (Vegar & Mijač, 2024). In addition, a recent study also found that HR managers show decreased willingness to invest in AI applications for human resources (Gieselmann et al., 2025). Limited adoption rate has been revealed in the accounting field as well (Gavrilova & Gurvitsh-Suits, 2020). These findings indicate disparities across industries, as expected, favoring the IT sector. Besides domain differences in adoption of AI, another recent study on ChatGPT confirmed that younger and less experienced workers are more likely to use ChatGPT. Additionally, the analysis showed that women tend to be much less likely to use ChatGPT (Humlum & Vestergaard, 2025). This significant divide in AI adoption has been noted on a globally level between governments as well (Wang et al., 2024).

The current workforce consists of Millennials, Generation X and Boomers, while Generation Z (Gen Z) has begun to enter the labour market. Gen Z, born between 1995 and 2010, is often referred to as young consumers or digital natives due to their immersion in a digital environment characterised by constant access to online

KEYWORDS
Barriers, Business Students, Generative AI, Gen Z, Innovation Resistance Theory.

PALABRAS CLAVE
Barreras, Estudiantes de Negocios, IA Generativa, Generación Z, Teoría de la Resistencia a la Innovación.

information (Ghauri et al., 2019). Gen Z makes up around 30% of the world's population and 27% of the labour force, which illustrates their purchasing power and growing economic influence. The consumption habits of Gen Z are increasingly oriented towards the principles of responsible, sustainable and ethical consumption, as they demand more transparency, accountability and sustainable practices from brands and companies (Halibas et al., 2025).

Gen Z will become the largest consumer group (Halibas et al., 2025) and will play a crucial role in driving innovation. The realisation of the full potential of technology-driven business transformation depends heavily on this group (Truncale, 2025). However, differences in attitudes of Gen Z, compared to other generations' attitudes have been noted in recent research, often showing inconsistency with well-established theory. Such as, a significant negative association between perceived ease of use and intention to purchase among the Gen Z (Duffett & Maraule, 2024).

Despite the rapid advancement and widespread recognition of AI, particularly generative AI like ChatGPT, there remains a significant gap in understanding its uneven adoption. These inconsistencies underscore the need for further research into the factors influencing AI adoption and the conditions under which its potential can be fully realized. Therefore, the identified research gap is the lack of empirical studies applying IRT to examine the adoption of generative AI tools like ChatGPT among Gen Z business students, a group poised to shape future workplace innovation dynamics. This study addresses this gap by investigating the most significant barriers perceived by Gen Z, providing insights into how existing theoretical frameworks may need adaptation for emerging technologies and younger populations.

This paper is structured into five main sections. The first section explores key phenomena and highlights existing research gaps that underpin the study. The second section presents a review of the relevant literature, followed by the third section, which details the research design and summarises the methodological approach. The fourth section outlines the study's findings, while the final section provides a theoretical and practical interpretation of the results, concluding the paper.

2. LITERATURE REVIEW

Innovation is defined as a new idea, practice, or object that is perceived by an individual or group as new (Rogers, 1983), ChatGPT has been clearly acknowledged as a groundbreaking technology with distinctive features (Jo & Bang, 2023).

The adoption of innovation constitutes a multidimensional domain of inquiry that encompasses three principal levels: government, business, and consumers. Each level assumes a distinctive role in the acceptance and dissemination of emerging technologies and practices (Yang & Kwon, 2024). When users evaluate the available information yet choose not to adopt innovative practices, they exhibit active resistance (Ajina et al., 2024).

While Technology acceptance model (TAM) (Davis, 1989) and Diffusion of innovation (DOI) (Rogers, 1983) are widely used frameworks for technology adoption, they primarily focus on drivers of acceptance. Innovation Resistance Theory (IRT) (Ram & Sheth, 1989), on the other hand, emphasizes barriers that inhibit adoption, making it particularly suited for examining resistance to generative AI technologies. IRT provides a theoretical foundation for understanding user (customer resistance), as it clarifies the behavioral patterns of resistance displayed by end-users (Alghamdi & Alhasawi, 2024a; Ram & Sheth, 1989). Numerous studies have tested this IRT framework in different domains of digital innovations, such as NFT (Rabaa'i et al., 2024a), mobile payments (Rabaa'i et al., 2024b), WhatsApp payments (Uddin et al., 2024), and crypto payments (Sangari & Mashatan, 2024).

Five well-established theoretical barriers that paralyze end-users' desire to adopt innovation can be classified as functional (usage, value, risk) and psychological barriers (tradition and image) (Ram & Sheth, 1989). The functional barriers may be perceived as an active manifestation of resistance related to the intrinsic characteristics and attributes of the innovation. In contrast, psychological barriers may be considered a passive form of resistance associated with the preexisting perspectives and beliefs of consumers/users (Rabaa'i et al., 2024b).

2.1. Usage Barrier

When IRT was introduced, usage was the most common reason for users' resistance, referring to innovation not being compatible with existing practices or habits (Ram & Sheth, 1989; Yang & Kwon, 2024). It is conceivable that this barrier may impede future utilization and acceptance, even after the completion of the initial learning period (Alghamdi & Alhasawi, 2024a). In the context of ChatGPT, it refers to innovation being too complex and inconvenient to use. Recent research among USA students has confirmed that this barrier is negatively associated with the intention to use ChatGPT in the educational context (Alghamdi & Alhasawi, 2024a).

H1: The usage barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.

2.2. Value Barrier

The value barrier arises when an innovation is perceived to offer insufficient performance relative to its price compared to existing alternatives. In the case of generative AI, this barrier can manifest if users view it as less effective or valuable than its predecessors or substitutes.

It can be argued that ChatGPT's end-users can compare it to traditional tools like Google Search. While not direct predecessors in the generative AI space, these tools serve similar functions in information retrieval and task assistance. End-users often assess the value of generative AI by comparing its performance and utility to these established alternatives. Recently, new gen AI tools have been introduced, particularly Google Gemini (February 2024) and Deep Seek (January 2025). Thus, these tools can be considered when comparing with alternatives, depending on users' being aware of them. A recent study that examined IRT in educational settings considered this value barrier from the perspective of the intrinsic value of the technology in the context of education; that is, whether using the technology in the course will *provide any value to the student at all* (Kalmus, 2024). Similar has been done in another study as well (Alghamdi & Alhasawi, 2024a). In both studies, it was confirmed that the value barrier has a significant impact on resistance.

H2: The value barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.

2.3. Risk Barrier

Risk barriers are unexpected side effects, which include *physical changes* to the body, *economic risks* due to high costs, *functional risks* linked to doubts about proper functioning, and *social risks* stemming from societal unacceptability (Ram & Sheth, 1989).

Risk barriers refer to the resistance arising from uncertainties linked to an innovation, which are intrinsic to any new technology (Rabaa'i et al., 2024b). Initially, scholars considered perceived risks as fraud or product quality; however, in the context of today's growing online activity, perceived risk is predominantly associated with the financial, psychological, physical, or social risks involved in online transactions (Laukkanen, 2016). Study of young shoppers confirms that perceived risk plays an important role in online purchase intentions and purchase cancellations (Sharma & Srivastava, 2025). Risks often associated with Gen AI tools are producing inaccurate information and being biased (Kalmus, 2024), and the recent research confirmed that the end users are aware of these risks (Tlili et al., 2023). Risks such as privacy issues, getting the wrong answers, and risk of malfunctioning have previously been confirmed as significant in the context of ChatGPT (Alghamdi and Alhasawi, 2024) and mobile payments (Rabaa'i et al., 2024b). Also, a recent study examining IRT on digital content subscription services examined risk barriers through the security and privacy issues (Yang & Kwon, 2024).

H3: The risk barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.

2.4. Tradition Barrier

This barrier is significant if the innovation **requires cultural change**. When an innovation is incompatible with an individual's existing values, past experiences, and social norms (Ram & Sheth, 1989), customers exhibit well-established routines, habits, societal norms, and personal beliefs. Tradition barriers refer to the clash of new technology with users' value systems, past experiences, and social standards (Laukkanen, 2016a), such as an example in the education

settings, where it could be considered that the usage of ChatGPT conflicts with academic norms (Kalmus, 2024). It can also reflect the preferred face-to-face communication (Alghamdi & Alhasawi, 2024a). In addition, in pursuit of generative AI, some people are still skeptical about this type of technology, thus, it is expected to have a negative impact on usage intention (Kalmus, 2024).

H4: The tradition barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.

2.5. Image Barrier

By definition, this barrier depends on the industry and the origin of the innovation. In general, an innovation maintains specific traits from its source. These traits may include the type of innovation, the producer, the complexity level, or the country of origin (Rabaa'i et al., 2024a).

Recent research confirmed that Gen Z demands greater transparency, accountability and sustainable practices from brands and businesses (Halibas et al., 2025). A negative attitude of academics towards ChatGPT was found to be driven by a dedication to academic integrity, both on a personal and collective level, an essential component for an academic's personal reputation and self-identity (Kalmus, 2024). Moreover, image barriers are related to adopters' overall impressions of innovation (Yang & Kwon, 2024).

Based on the above literature review, the posed research question is: *How does Innovative Resistance Theory (IRT) explain the adoption of ChatGPT among Gen Z business students, and what are the most significant barriers influencing their adoption of generative AI?*

Based on the research question and theoretical framework, this study proposes a set of hypotheses to empirically test whether the barriers defined in Innovation Resistance Theory (Ram & Sheth, 1989) are applicable to the adoption of ChatGPT among Gen Z business students. The hypotheses focus on identifying and validating the presence of these barriers in this specific context.

H5: The image barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.

3. METHODOLOGY

This study employed a survey methodology. The questionnaire was designed based on validated instruments from previous studies (Alghamdi & Alhasawi, 2024b; Kaur et al., 2020; Laukkanen, 2016b) and adapted to fit the context of generative AI adoption. Items measured each barrier within the IRT using a seven-point Likert scale. The survey was created and distributed using the *Lime Survey* tool, which facilitated efficient data collection and ensured respondent anonymity. Data was collected during the academic year 2024/2025 and analysed using the SPSS and IBM AMOS statistical tools. The sample consisted of first-year business students (born between 2007 and 2008), thus belonging to Gen Z. Students were recruited using convenience sampling. This cohort represents digital natives likely to encounter AI tools early in their academic and professional lives.

The measurement model, specifically confirmatory factor analysis, was utilised to evaluate model fit indices while verifying reliability and validity indicators. Although limited to a single university, the sample size (n=314) exceeds minimum recommendations for SEM (Hair et al., 2017), ensuring statistical robustness. Nonetheless, results should be interpreted cautiously, as generalizability to other age groups or disciplines is limited.

4. RESULTS

Out of the 344 survey responses collected, a total of 314 were deemed valid and fully completed, resulting in a usable response rate of approximately 91.3%. The analysis began with an overview of the descriptive statistics to provide a general understanding of the sample characteristics and the main variables under investigation. This initial step offers insight into the demographic profile of respondents and establishes the foundation for subsequent multivariate analyses. In total, 74,7% (n=192) were female, and 25,6% (n=66) male correspondents. Given that structural equation modelling (SEM) necessitates data normality (Hair, Hult, et al., 2017), the study data were calculated for skewness values ranging from absolute values of 0,034 to 1,474, and kurtosis values ranging from 0,087 to 1,893. All calculated values are within the acceptable range of [−2; +2], as specified by (George & Mallery, 2010).

Table 1. **Results for descriptive statistics**

FACTOR	ITEM CODE	N	MEAN	SKEWNESS	KURTOSIS
Usage barrier	US_B_q1_1	314	2,14	1,440	1,893
	US_B_q1_2	314	2,27	1,474	1,501
	US_B_q1_3	314	2,40	1,147	,963
	US_B_q1_4	314	2,75	,641	-,087
Value barrier	VB_q2_1	314	2,71	,792	,127
	VB_q2_2	314	2,68	,800	,231
	VB_q2_3	314	3,14	,596	-,697
	VB_q2_4	314	3,13	,357	-,636
Risk barrier	RB_q3_1	314	3,28	,323	-,716
	RB_q3_2	314	3,21	,401	-,615
	RB_q3_3	314	3,98	-,244	-,712
	RB_q3_4	314	3,78	,083	-,789
	RB_q3_5	314	4,13	-,130	-,696
Tradition barrier	TRAD_q7_1	314	4,07	-,034	-,716
	TRAD_q7_2	314	3,59	,137	-,701
	TRAD_q7_3	314	3,46	,296	-,634
Image barrier	IM_q10_1	314	3,12	,362	-,559
	IM_q10_2	314	3,15	,447	-,535
	IM_q10_3	314	2,93	,535	-,616

Source: authors' calculation

As a first step, Confirmatory Factor Analysis (CFA) was conducted to assess the underlying structure of the factors. The rotated component matrix, presented in the table below, displays the factor loadings for each item.

Table 2. **Results for CFA**

	COMPONENT				
	1	2	3	4	5
US_B_q1_1		,793			
US_B_q1_2		,690			
US_B_q1_3		,758			
US_B_q1_4		,630			
VB_q2_1	,700				
VB_q2_2	,672				

VB_q2_3	,673				
VB_q2_4	,704				
RB_q3_1			,514		,691
RB_q3_2			,415		,744
RB_q3_3			,804		
RB_q3_4			,664		
RB_q3_5			,800		
TRAD_q7_1				,666	
TRAD_q7_2				,802	
TRAD_q7_3				,800	
IM_q10_1	,531				
IM_q10_2	,591				,445
IM_q10_3					,607

Source: authors' calculation

Based on the initial CFA results, the decision was made to remove the construct *image barrier* due to factor loadings falling below the acceptable threshold of 0.60. Following this adjustment, a revised CFA was conducted using IBM AMOS. The calculated values for Average Variance Extracted (AVE), Composite Reliability (CR), and Factor Loadings (FL) were all within acceptable limits (Hair, Babin, et al., 2017; Hair Jr. et al., 2014; Hanaysha & Gulseven, 2024). However, discriminant validity was not achieved, as the constructs *usage barrier and value barrier* showed a high degree of correlation (Afthanorhan et al., 2021). The revised model demonstrated an acceptable fit, with χ^2/df = 2,12, GFI = 0,93, CFI = 0,954, and RMSEA = 0,06. Despite the overall model fit being within recommended thresholds, the overlap between usage and value barriers suggests that these constructs may not be empirically distinct within this sample. The detailed results are presented in the following table.

Table 3. **Validity results**

	AVE	CR	USAGE BARRIER	VALUE BARRIER	RISK BARRIER	TRADITION BARRIER
Usage barrier	0,50	0,80	**0,71013309**			
Value barrier	0,50	0,80	*0,796*	**0,703624**		
Risk barrier	0,49	0,82	0,483	0,466	**0,69789885**	
Tradition barrier	0,57	0,80	0,402	0,505	0,492	**0,758251**

Source: authors' calculation

After we removed the image barrier factor, a revised CFA was conducted. To assess the suitability of the dataset for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were conducted. The KMO value was 0,853, indicating a high level of sampling adequacy and suggesting that the variables share sufficient common variance to justify the use of factor analysis. Additionally, Bartlett's Test of Sphericity was highly significant (χ^2 (120) = 2206.070, p < ,001), confirming that the correlation matrix is not an identity matrix and that significant correlations exist among the variables. Together, these results validate the appropriateness of proceeding with factor analysis on the dataset.

Table 4. **Results for CFA**

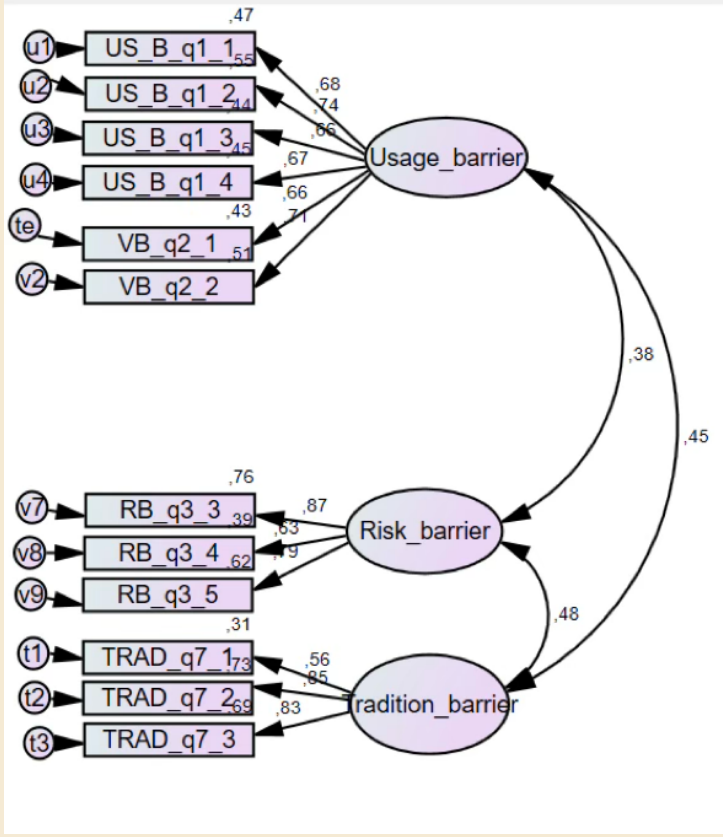
	COMPONENT		
	1	2	3
US_B_q1_1	,735		
US_B_q1_2	,725		
US_B_q1_3	,701		
US_B_q1_4	,644		
VB_q2_1	,727		
VB_q2_2	,743		
VB_q2_3	,603		
VB_q2_4	,565		
RB_q3_1		,772	
RB_q3_2		,699	
RB_q3_3		,791	
RB_q3_4		,597	
RB_q3_5		,727	
TRAD_q7_1			,697
TRAD_q7_2			,809
TRAD_q7_3			,784

Source: authors' calculation

CFA was conducted in AMOS with three constructs/factors, following the combination of *value barrier* and *usage barrier* into a single construct due to their high correlation. Further refinement of the model was necessary, as several manifest variables exhibited factor loadings below the acceptable threshold of 0,60.

Through multiple iterations, the variables with the lowest loadings were systematically removed to improve the model's validity and fit. The final model demonstrated acceptable fit indices, with CMIN/DF = 2,796, GFI = 0,931, CFI = 0,937, and RMSEA = 0,076. The finalized measurement model is presented in **Figure 1** with the results.

Figure 1. **CFA results in IBM Amos**



Source: authors' calculation

The analysis revealed that two of the five proposed hypotheses were supported (H3 and H4), confirming the significance of the risk and tradition barriers in the context of ChatGPT adoption among Gen Z students. In contrast, two hypotheses (H2 and H5) were not supported, suggesting that the value and image barriers do not play a decisive role in this cohort. One hypothesis (H1) was partially

supported, reflecting that the usage barrier emerged but did not demonstrate strong empirical distinctiveness from the value barrier, highlighting possible conceptual overlap.

Table 5. **Hypothesis results**

HYPOTHESIS	RESULTS
H1: The usage barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.	Partially supported
H2: The value barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.	Not supported
H3: The risk barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.	Supported
H4: The tradition barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.	Supported
H5: The image barrier is a significant and distinct factor in the adoption of ChatGPT among Gen Z business students.	Not supported

Source: authors' calculation

5. DISCUSSION

The goal of this paper was to answer the research question: *How does Innovative Resistance Theory (IRT) explain the adoption of ChatGPT among Gen Z business students, and what are the most significant barriers influencing their adoption of generative AI?* As elaborated in the results section, the measurement model based on IRT required modifications. Specifically, the *image barrier construct was removed* (H5) due to low factor loadings, and several manifest variables from the value barrier construct were also excluded. Consequently, *the value barrier was merged with the usage barrier* (H1, H2), as these two constructs were not empirically distinguishable in this sample. The recent survey conducted on Gen Z, showed that brand credibility can be a good predictor of repeat purchases/intention to use it (Pandowo & Mamuaya, 2024), as well as that trust among Gen Z cohort has positive impact on purchase intention (Duffett & Maraule, 2024). However, in this study, the image was not considered a barrier. This raises some critical questions regarding the applicability of IRT in understanding the adoption of ChatGPT among Gen Z business students. One might argue that the removal of the image barrier construct due to low factor loadings indicates a deeper issue with the IRT framework itself, suggesting that it may not adequately capture the complexities

of generational attitudes towards technology. Furthermore, merging the value barrier with the usage barrier could oversimplify the nuanced reasons why Gen Z may hesitate to adopt generative AI tools. In the context of this study, the merging of the value barrier and usage barrier constructs is justified for several reasons. First, there is notable empirical overlap between these constructs, as the data suggests they may be measuring similar underlying concepts. By reducing the number of constructs, we can concentrate on the most significant barriers without the complications that arise from managing multiple overlapping dimensions. The decision to combine these constructs is also informed by theoretical considerations. Our findings indicate that the value and usage barriers are conceptually aligned, and their combined effects provide a clearer understanding of the phenomenon. Lastly, the unique characteristics of our sample, particularly the attitudes and behaviors of Gen Z business students, suggest that the barriers they encounter are indeed more integrated than previously assumed.

This finding offers a notable deviation from earlier research applying IRT in other contexts. For instance, a study on mobile payments found no issues with discriminant validity and confirmed that four out of five barriers significantly impacted intention to use, with the highest beta coefficient remaining modest (0,29) (Rabaa'i et al., 2024b). Although the image barrier was found to be insignificant in that study as well, the other constructs (usage, value, tradition, and risk) each showed a statistically significant negative influence on adoption intentions.

Another relevant comparison comes from a study conducted among university students in the United States, where participants were introduced to ChatGPT via instructional videos before completing the survey (Alghamdi & Alhasawi, 2024a). Unlike the current research, that study found no issues with discriminant validity across all five IRT constructs/factors. However, a key difference lies in the participant profile: most respondents in their study held at least a bachelor's degree, whereas our sample consisted of undergraduate business students (average age: 19). Their results confirmed all hypothesized barriers, with beta values ranging from 0,217 to 0,687, indicating a stronger and more distinct perception of barriers in a more older user group.

Interestingly, research focused on educators' perspectives toward ChatGPT adoption confirmed only the usage and value barriers (Kalmus, 2024), partially supporting our combined construct finding.

Meanwhile, a study by (Yang & Kwon, 2024) confirmed the influence of the tradition barrier on actual use but found no statistical support for the risk barrier.

Taken together, our findings suggest that for Gen Z business students, many of whom are at the early stages of their academic and professional journeys, barriers to AI adoption are perceived differently than in more mature or experienced populations. The blurred distinction between usage and value barriers may reflect this cohort's expectation that tools like ChatGPT should be intuitive, immediately useful, and free of steep learning curves. Meanwhile, the lack of significance for the image barrier implies *that reputation or social perception plays a limited role in shaping Gen Z's attitudes toward generative AI*. This goes against earlier studies that highlighted how Gen Z shapes the design of socially responsible consumption patterns. As a generation that cares deeply about social issues, Gen Z really hopes brands will embody values like inclusivity, equity, and authenticity(Halibas et al., 2025). According to PDI Technologies (2023), a remarkable 91% of Gen Z shows a preference for purchasing from sustainable companies and cares deeply about brand image.

Our study contributes to the evolving discourse on the adoption barriers of generative AI by applying and adapting IRT to a Gen Z student sample. While the theory remains useful, our findings suggest that its traditional structure may require revision when applied to emerging technologies and younger populations. In particular, the empirical overlap between value and usage barriers, along with the irrelevance of the image barrier, signals the need for updated frameworks that better reflect contemporary user expectations and digital fluency. Therefore, future research should continue exploring these dynamics across diverse populations and settings to ensure theoretical models remain responsive to the changing landscape of technological innovation. This paper comes with the limitations, particularly one regarding the sample. Nonetheless, results should be interpreted cautiously, as generalizability to other age groups or disciplines is limited.

For managers and decision-makers, these findings highlight the need to design AI tools and implementation strategies that minimize complexity and maximize immediate utility, matching Gen Z's expectations for intuitive solutions. From a societal perspective, educators and policymakers should consider how digital literacy and trust-building measures can reduce perceived barriers and

ensure that generative AI is adopted responsibly and equitably across different user groups. Based on the findings and discussions presented, here are our future research propositions:

RP1. Future research should examine the influence of social media, peer perceptions, and the evolving identity of Gen Z on their attitudes toward generative AI tools. A qualitative approach could provide deeper insights into how these social dynamics shape perceptions and adoption intentions.

RP2. Investigating the impact of educational background on the perception of adoption barriers in generative AI tools is warranted. A comparative study involving diverse educational levels (e.g., high school students versus graduate students) could elucidate how familiarity with technology correlates with the significance of barriers such as usage, value, and tradition.

RP3. Given the mixed findings regarding the image barrier, further research should focus on its relevance across different contexts and demographics. Studies could explore the factors influencing brand image perceptions among Gen Z and whether these perceptions shift with exposure to generative AI technologies.

RP4. Research should seek to adapt and integrate IRT with contemporary frameworks that reflect the unique characteristics of younger populations. This may involve developing new constructs that account for the overlap between usage and value barriers, thus refining theoretical models for technological adoption.

RP5. Conducting longitudinal studies that track the attitudes and adoption behaviors of Gen Z over time could provide valuable insights into how perceptions evolve with increased exposure and familiarity with generative AI tools.

RP6. Future investigations could explore the relationship between brand values (e.g., sustainability, inclusivity, equity) and the adoption of generative AI tools among Gen Z consumers. This could involve examining whether alignment with these values enhances trust and credibility in AI technologies.

RP7. To gain a broader understanding of generational adoption patterns, research should include cross-cultural comparisons of Gen Z attitudes toward generative AI. Such studies could reveal how cultural factors influence perceptions of barriers and the overall acceptance of technology.

By pursuing these research propositions, scholars can further contribute to the understanding of generational dynamics in technology adoption, ensuring that theoretical models remain relevant and responsive to the evolving landscape of digital innovation.

6. CONCLUSION

For business and marketing leaders, the emergence of Gen Z as both the future workforce and a key consumer group brings an important change: it's not just about persuading them but creating meaningful experiences. Gen Z interacts with technology not simply because it is new, but because it is incredibly useful, easy to understand, and perfectly blends into their everyday lives. This behavior is evident whether they are students, employees, or consumers. In other words, Gen Z does not resist innovation they abandon poor execution.

In marketing terms, this means traditional narratives around innovation, focused on reducing fear, emphasizing prestige, or broadcasting reputational gains, are losing their effectiveness. Gen Z is not concerned with whether a tool like ChatGPT looks impressive; they care if it works for them, right now. The blurred line between value and usage uncovered in this study should prompt marketers to shift focus from *selling innovation* to showcasing application and ease. Also, despite Gen Z being known for buying only from conscious brands/images, it seems that that is not applicable in the context of ChatGPT. Its benefits override almost all barriers. Further, instead of over-investing in brand reputation or fear mitigation strategies, businesses should channel efforts into making the technology visible, accessible, and useful without a learning curve. Beyond marketing, these insights suggest that educational institutions and public sector bodies must proactively address any skills gaps and support fair access to such technologies.

For brands promoting AI-enabled products or services, the key is to market functionality, not futurism. Demonstrations, hands-on trials, and peer-driven content (like short-form tutorials or user testimonials) will resonate more than abstract promises. Messaging should emphasize how the tool fits into Gen Z's goals, speeds up tasks, or boosts creativity, not how advanced the technology is.

As Gen Z matures into decision-makers and brand advocates, their preferences will reshape both internal tech adoption and external customer engagement. Businesses that learn to design, market,

and position innovation through the lens of Gen Z utility will build stronger loyalty, faster adoption, and more credible digital brands.

Crucially, as this generation ascends into leadership roles, their preferences will not only influence internal adoption but will also drive customer-facing innovation strategies. Companies that learn to design and deploy technology with Gen Z in mind, emphasizing seamless value over persuasion, will be far better positioned to thrive in a Gen Z-led economy. Simply put, if it's not easy, it's invisible. Marketing strategies must adapt accordingly, because the future of business isn't just AI-powered, it's Gen Z-driven.

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