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Technological Acceptance of E-Commerce by Generation Z in Portugal

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Abstract: E-commerce allows consumers to make online purchases easier, faster and at any time, making it different from traditional commerce. This technology has grown recently and has become popular among younger generations. This is the case of Generation Z, a technological generation that will become the leading group of consumers in the coming years. Despite the positive results regarding this practice, the expected results for the Western world, a world of which Portugal is a part, have yet to be achieved. The main objective of this investigation was to understand the acceptance of e-commerce by Generation Z in Portugal. The nature of this study is quantitative and used the questionnaire for data collection based on the proposed conceptual model built through the literature review. The dimensions obtained were analysed using the SmartPLS 4 and IBM SPSS Statistics 26 tools. The results allowed responding to the proposed objectives to support or reject the defined hypotheses associated with the variables trust, perceived risk, perceived ease of use, attitude, perceived usefulness, intention to use, privacy and security. It was also possible to define the digital consumer profile of Generation Z in Portugal.

Keywords: e-commerce; Generation Z; digital consumer; technological acceptance

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1. Introduction

E-commerce or electronic commerce is defined as the development of buying and selling processes supported by electronic means and the internet [1]. In the last twenty years, e-commerce has emerged as one of the most important markets for goods and services [2].

According to Kemp [3], a website with reports designed to help people and organisations find data, insights and trends resulting in more informed decision-making, 3.78 billion people made online purchases, an increase of 10% relative to the analysis carried out in the previous year. Still, in the same study, it was possible to identify that the total annual expenditure on online purchases was 3.85 billion, +18% more than last year. Despite the positive values presented previously at a global level, De Marco [4] indicates that the expected levels for the prevalence of this type of practice in the Western world still need to be reached.

In the case of Portugal, it was found that, in 2020, sales of goods or services carried out through e-commerce represented 17% of business volume, a value that decreased by 2.8 percentage points (p.p.) compared to 2019 [5]. Regarding 2021, we verified that 25.2% of internet users in Portugal made online purchases, showing an improvement of 8.2%, although it is still considered a small value [6]. We also found that only 14.1% of companies with websites in Portugal place orders or reservations for products online, which makes it difficult for users to adhere [5]. According to Veybitha [7], e-commerce is becoming popular among younger generations, such as Generation Z. Generation Z, known as the

Net-Generation, E-Generation or iGen, refers to individuals born between 1995 and 2010 [8]. This is a more technological generation, as these individuals were born during the advent of new technologies, and it is therefore quicker and easier for them to move online [9]. The research by Costa [10] states that this generation will manage and direct the world in the coming years.

As previously mentioned, despite positive results overall, De Marco [5] states that the expected levels for the prevalence of this type of practice in the Western world, a world in which Portugal is included, still need to be reached. We chose to carry out this research on Generation Z, as it is a generation going through the transition period from adolescence to young adulthood, becoming an important group in the job market [7]. Thus, with great potential for purchasing power, they are becoming essential to guarantee the success of a company's communication and marketing [11]. Corroborating the above information, Vieira [8] indicates that this generation will represent the most relevant group of consumers in e-commerce in the coming years. The behaviour of younger generations tends to be quite different from previous generations due to political, cultural, and socioeconomic changes, which makes understanding this group more critical [12]. Through this study, we intend to contribute to this topic with recent data, aiding the increase in knowledge at a national level and allowing us to understand whether Generation Z users accept this type of technology in Portugal.

Therefore, the following research question was created: How does Generation Z accept e-commerce in Portugal? Given the research question, the general objective was defined, which consists of understanding the acceptance of e-commerce by Generation Z in Portugal. The following specific objectives were also defined:

1. Define the digital consumer profile of Generation Z;
2. Check the impact of security and privacy concerning perceived risk;
3. Verify the impact of perceived risk, privacy and security on the trust factor;
4. Investigate whether the perceived ease of use and attitude can influence purchase intention;
5. Determine technological acceptance by Generation Z in Portugal.

In this way, we intend to understand the level of acceptance of Generation Z concerning the acceptance of e-commerce and technology in Portugal, proposing a conceptual model that can explain the acceptance of this technology and testing this model through the analysis of the factors, dimensions, variables, and respective causal relationships defined therein.

This study is different from other existing studies addressing e-commerce and Generation Z, as it is a study applied to the Portuguese population. In this way, it is hoped that this study will contribute to understanding the types of consumers that Generation Z in Portugal are, while providing recent data on this subject and increasing knowledge at a national level, which would allow this information to be used at an academic and business level.

2. E-Commerce

E-commerce is defined as developing buying and selling processes supported by electronic means and the internet [1]. In other words, it allows consumers to make purchases online in an easier, faster way and at any time if they have access to the internet, making it different from traditional commerce. According to the WTO (World Trade Organisation), this process includes the production, distribution, marketing, sale, or delivery of products/services activities [13].

E-commerce emerged in the 1960s through Electronic Data Interchange (EDI) to share business documents between companies. Over the years, e-commerce has developed, and the number of users sharing electronic documents has increased, not only in companies but also among individual users. In the 1990s, the moment that revolutionised the e-commerce industry was the founding of eBay and Amazon [10]. Over the last twenty years, e-commerce has emerged as one of the most important markets for goods and services [2].

3. Generation Z

The term "Generation Z" emerged in the 20th century as a field of study in sociology intending to research explanations for the mechanisms responsible for large-scale social changes [14]. According to Thangavel [12], the term generation is defined as an identifiable set of people who share common birth years, experience events and similar living conditions and grow up in a comparatively similar environments with equal resources, opportunities and challenges. Five generations were identified: Baby Boomer, Generation X, Generation Y, Generation Z and Generation Alpha [15].

According to Jílková [11], regarding e-commerce, there are differences between generational groups regarding purchasing behaviour and frequency, and they have different experiences in terms of impact and contact with the internet. Therefore, understanding generational differences and how these contribute to their online shopping behaviour is fundamental to effectively segmenting the target audience.

Generation Z are descendants of the Baby Boomers and is also known as the I-Generation, Post-Millennials, Gen Wii, or NextGen [12]. This generation comprises individuals born between 1995 and 2010 who were exposed to technology from a young age, thus influencing their habits and behaviours, as they do not know a world without internet access [13]. The letter Z in the name of this generation comes from the expression zapping, an term referring to quickly changing television channels in search of an exciting topic [8]. To characterise this generation, the same author names eight attributes: freedom—they value their freedom, both of choice and expression; personalisation—this is a generation that likes to make what surrounds them their own; integrity—they seek integrity and openness, ensuring that a company's values are in line with their values; scrutiny—they consider it normal to search for information about companies and products/services to obtain greater transparency about their reputation; collaboration—this generation is participatory and communicative from an online perspective; entertainment—they value the availability of entertainment anywhere, whether at work, in education or in social life; speed—because they were born in a digital environment, they are used to instant responses and real-time online conversations, which makes communication faster; consumers want quick responses and deliveries when requesting a product or service; and innovation—they intend to purchase innovative products that contributing to self-esteem and social status.

4. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was created in 1986 by Davis (Figure 1), and its main goal is to predict the acceptance of a system by the users, as well as their behaviour when using that technology [16].

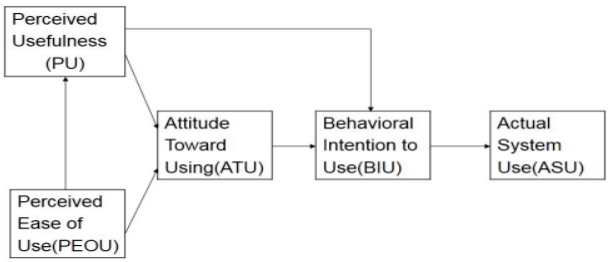

Figure 1. TAM 1986 [17].

Its first version was an adaptation of the TRA, but in 1989, the model was updated (Figure 2) and external variables were taken into account to directly influence perceived ease of use and perceived usefulness [18].

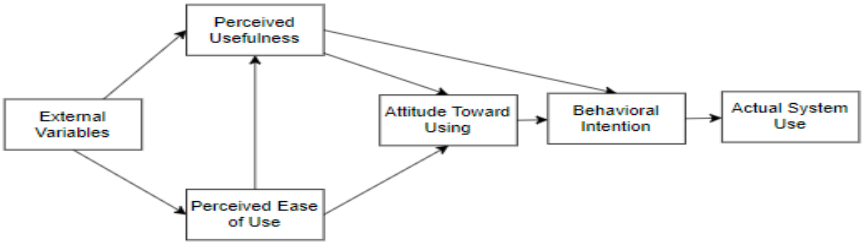

Figure 2. TAM 1989 [19].

Finally, in 1996, the latest version of this model appeared (Figure 3), suggested by Venkatesh and Davis, eliminating the "Attitude" variable as it did not have a direct influence on behavioural intention.

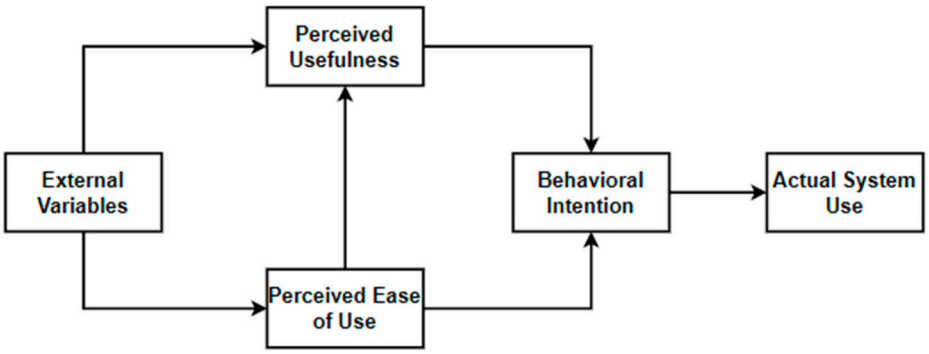

Figure 3. TAM 1996 [20].

As mentioned above, the TAM proposes two variables, perceived usefulness and perceived ease of use, which make it possible to measure the effect of external variables related to a given technology in relation to its intention to use it [21].

Perceived usefulness is related to the degree to which a user considers that the use of a technology would contribute positively to their performance in carrying out a task, in other words, it improves the development of the work carried out with it [22]. The second variable, perceived ease of use, is associated with the degree to which the user considers that the use of a particular technology contributes to a reduction in physical and/or mental effort when performing a task [22]. These two variables also have a direct (positive) relationship, i.e., if a technology becomes simpler, the benefit will be improved performance in its use [21].

5. Research Model

The proposed model (Figure 4), presented below, is an adaptation of the model created by Lestari (Figure A1) [23]. The author believes that Generation Z consumers could represent many opportunities for companies. Therefore, future studies should consider other variables to examine regarding the direct or indirect effects of adopting technology. The TAM model was also used as a basis to develop this model proposal. It is considered essential to have this model (TAM) as a base because it is one of the most pop1ular models used to research the acceptance and use of technology [24], and the model in this paper is based on it.

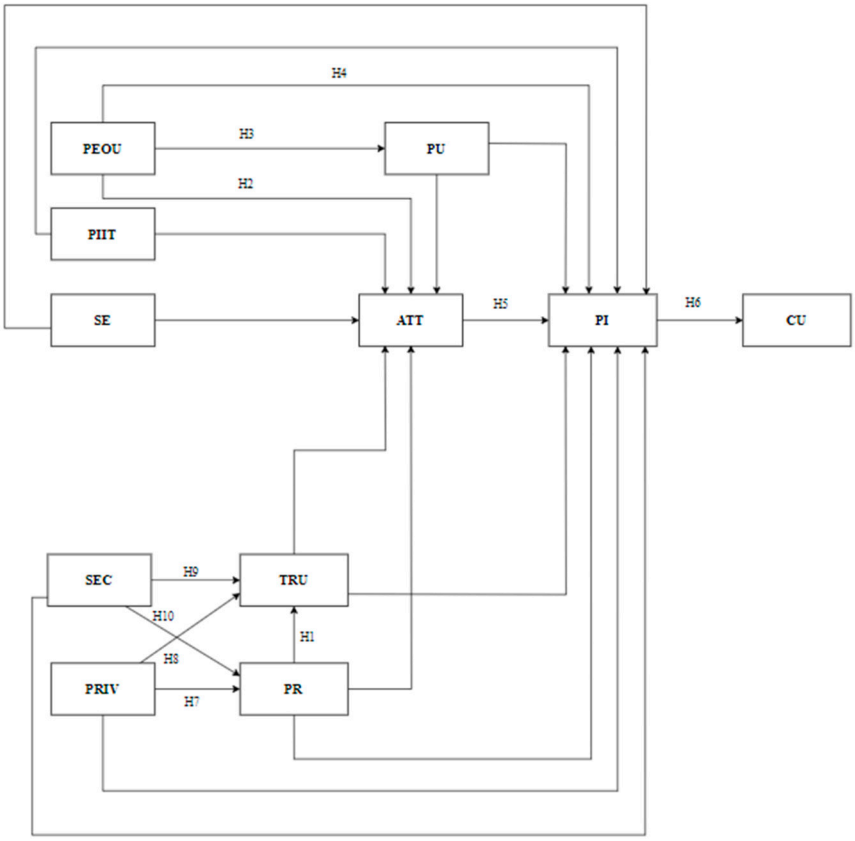

Figure 4. Proposed model based on the model by Lestari [23]. Abbreviations: PEOU—perceived ease of use; PIIT—personal innovation applied to information technology; SE—self-efficacy; PU—perceived usefulness; SEC—security; PRIV—privacy; TRU—trust; PR—perceived risk; ATT—attitude; PI—purchase intention; CU—current use.

In this way, the following hypotheses were defined, which are also shown in Figure 4:

H1: *Perceived risk has a negative impact on digital consumer confidence.*

H2: *Perceived ease of use has a positive impact on attitude when adopting an e-commerce platform.*

H3: *Perceived ease of use has a positive impact on the perceived usefulness related to the use of e-commerce platforms.*

H4: *Perceived ease of use has a positive impact on the intention to adopt an e-commerce platform.*

H5: *Attitude has a positive impact on the intention to adopt an e-commerce platform.*

H6: *Purchase intention has a positive impact on the current use of e-commerce platforms.*

H7: *Online privacy has a negative impact on consumer perceived risk.*

H8: *Online privacy has a positive impact on consumer trust.*

H9: *Online security has a positive impact on consumer trust.*

H10: *Online security has a positive impact on consumer perceived risk.*

Although it was possible to study several relationships between variables using this model, considering time constraints, only ten were analysed. Making this decision resulted in a high number of relationships being studied within a short period. In this way, the remaining relationships were analysed by inference (i.e., that which is deduced from something else; illation; deduction; conclusion [25]). For example, Hypothesis 5 (i.e., attitude has a positive impact on the intention to adopt an e-commerce platform) is considered valid since the variables PIIT, AE, CONF, and RP would also have a positive impact on the intention to adopt technology since this attitude is related to all the variables mentioned above.

For the insertion of external variables, reference was made to the analysis carried out in the literature review, which is in line with the proposed study objectives:

- Self-efficacy Factor

The concept of self-efficacy is defined as an individual's perception of their ability to control and influence an action or change behaviour [26].

Self-efficacy is a construct that affects the selection of human action, regardless of the existing alternatives, the amount of effort that will be required to carry out the action and the resistance to face obstacles and the opportunities to act; that is, self-efficacy is an essential factor in influencing behaviour through a process, where it is necessary to establish the goals to be achieved, outcome expectations and challenges that may be encountered [27]. There is also the concept of computer self-efficacy (CSE), which is defined as the self-assessment of the ability to use a computer, associated with the belief that users have about their ability to deal with existing challenges associated with this [28].

According to Eraslan Yalcin and Kutlu [28], CSE has a high influence on the acceptance of a technology, as users are more likely to use a technology when they need less effort to use it. Individuals with high self-efficacy tend to believe that they can perform well in the future, even in situations with high difficulty. Consequently, they tend to view difficult tasks as something to be mastered, rather than something to avoid [29].

In addition, people with high self-efficacy associated with information technology find it less difficult to use and have more a positive attitude towards it [29].

- Perceived Usefulness Factor

Perceived usefulness is defined as a user's subjective belief that using a technology will increase their performance when performing a task [30]. In the context of e-commerce, perceived usefulness will make it possible to improve the following activities for the user [31]: improving performance when shopping online; increasing their effectiveness when shopping online; increasing productivity; and faster online shopping.

Perceived usefulness is made up of the benefits that customers can obtain by saving time and money and making decisions between a wide variety of products and services [32]. In addition to the benefits mentioned above, there are now more and more ways to reward customers, such as promotions and free delivery. In this way, perceived usefulness is considered to influence consumer intentions and attitudes towards e-commerce [33].

- Perceived Ease of Use Factor

The perception of ease of use is a subjective judgement on the part of users regarding the degree to which they feel that using a technology can make their process easier and free of psychological and physical effort [34]. In other words, if a person feels that a new technology is easy to use in the process of carrying out a task, they may pass on positive feedback to those closest to them and will be more inclined to use the technology [35].

A consumer making an online purchase expects to find specific information or products without having to make a great effort and also expects this action to take as little time as possible. They also expect to find products and services online as easily as possible, with the benefit of comparative analyses of prices, availability, payment terms, delivery terms and privacy policies [33].

Perceived ease of use has been recognised as one of the main elements influencing attitude and intention to use, as in the TAM model [36]. It is therefore considered a

necessary factor in establishing the acceptance of the use of technology in relation to online shopping [33].

- Perceived Risk Factor

Perceived risk is considered a form of lack of confidence and refers to general assessments of uncertainty, which may be reflected in adverse consequences in the future [37]. The consumer's perception of risk is a major obstacle and is considered by most scholars to be the main factor affecting the adoption of a technology [38]. Regarding online shopping, there are four types of perceived risk that can be considered [39]: psychosocial risk—the anticipated harm affects the consumer's identity or self-esteem; financial risk—this is a monetary harm, as there may be a loss of money; time risk—this harm causes the consumer to lose time, such as when there is a delay in the delivery of the product; product or performance risk—this damage occurs when expectations about the product are not met after it has been used.

With the evolution of the internet and the possibility of making online purchases, consumer uncertainty has increased significantly due to the types of risks mentioned above [40]. Therefore, individuals with a higher perception of risk are not likely to buy products or services online, as their intentions are suppressed when they discover that the transaction may be risky [41].

In order to corroborate the previous information, Fortes and Rita [42], by analysing various studies, indicate that perceived risk has a negative effect on the intention to buy online. The same authors add that this factor also has a negative effect on consumer attitudes towards online purchases.

- Trust Factor

Trust is defined as a subjective disposition to believe in the occurrence of an action consistent with positive assumptions [43]. Thus, trust is considered a multidimensional factor, consisting of [44]: benevolence—interest in creating a relationship and avoiding opportunistic situations; honesty—belief that third parties will behave honestly, keep their promises and can be counted on to do the right thing; competence—in the online environment this involves, for example, a website having the technical and commercial infrastructure to carry out its activities successfully.

In e-commerce, trust plays an important role because customers cannot touch, see in person or check the quality of a product. In addition, they also have concerns associated with making online payments [45]. The same author states that trust is an important predictor of attitude towards online purchases and online purchase intention [42], adding that this factor also negatively influences perceived risk.

- Security Factor

Information security is an important asset of any organisation and must be highly protected, as the loss or disclosure of this asset can damage the company [46].

Security, in the context of e-commerce, is a necessity and is defined as the implementation of rules and/or protocols that carry out all transactions in a secure manner [47].

According to [48], consumer perception of this factor is associated with both online transactions and financial information to ensure that there is no unauthorised access. The factor that can increase online transactions in e-commerce is the guarantee of security [49]. Thus, security is important in online shopping, as it is a direct and significant factor in consumer intention [50].

In addition to the aforementioned influence, this factor also affects perceived risk, as it influences the buyer's mindset and purchasing behaviour [51]. Another factor that influences security is trust, since the higher the level of security, the greater the possibility of securing customers and the more customers will make purchases [36].

- Privacy Factor

Privacy is recognised as a fundamental human right by the United Nations [52] and is defined as an individual's right to control the collection and use of personal digital data

and non-digital information, as well as its unapproved disclosure [43]. Due to many widely publicised news stories through the media over the past few years about personal data breaches, consumers have become unsure about how and where their personal information is used [36].

The increased use of e-commerce over the years has led to privacy becoming a more relevant issue in e-commerce, as it has resulted in a huge amount of personal information about consumers being collected and used [52].

The impacts of privacy concerns lead to less trust and consequently a perception of greater risk when sharing information online [52]. Due to this concern, data protection laws have been implemented in most countries, such as the GDPR [43]. According to Fortes and Rita [42], after they analysed various studies, in addition to this factor influencing the intention to buy online, it also has an influence on perceived risk, trust and attitude when making an online purchase.

- Attitude Factor

Attitude is defined as an individual's positive or negative view of a behaviour. This individual is concerned with the possible consequences of carrying out that action, which may lead to different decisions based on different evaluations [35].

Associated with online shopping, a customer's attitude is often associated with emotion and is considered the main predictor of the intention to adopt a technology [34]. This construct has been used in various theories of IT adoption, such as TRA, TAM and DTPB [53]. According to Ariff et al. [54], based on studies carried out, attitude can be expected to have a significant and direct impact on online purchase intention.

Therefore, it is considered that when consumers have positive perceptions of a certain technology, their adoption intentions will also increase [34]. The same is true in reverse, i.e., if a user has negative perceptions of a particular technology, their adoption intention will decrease.

6. Methodology

The present investigation is a quantitative and descriptive study, with theoretical research being initially carried out, and subsequently, an online questionnaire was carried out as the main data collection method.

To carry out this study, we adapted the model created by Lestari [23], which is an adaptation of the TAM (technology acceptance model). The author considers that the segmentation of Generation Z consumers could offer many opportunities for companies. Therefore, future studies should consider other variables to examine direct or indirect effects on technology adoption.

The analysis carried out in the literature review was used as a reference to insert new external variables, evaluating the following studies: [16–65].

Five objectives were defined, with four of the five objectives being associated with the ten defined hypotheses, as shown in Table 1. Therefore, to answer the hypotheses, a structural equation modelling analysis was carried out using the SmartPLS 4 tool. Unfortunately, it was not possible to analyse Hypothesis 6 (i.e., purchase intention has a positive impact on the current use of e-commerce platforms) using this tool since it does not support relationships between ordinal qualitative variables and ordinal qualitative variables. Therefore, the analysis of this hypothesis was carried out with the help of the IBM SPSS Statistics tool.

The data relating to the study were collected through a survey carried out using an online questionnaire, which was anonymous. Through the analysis of this investigation, the aim was to obtain an understanding of the technological acceptance of e-commerce by members of Generation Z in Portugal, as well as to define their digital consumer profile.

Table 1. Objectives-hypotheses relationship.

	Objectives	Hypotheses
1.	Define the digital consumer profile of Generation Z.	N/A
2.	Check the impact of security and privacy in relation to perceived risk.	H7, H10
3.	Verify the impact of perceived risk, privacy and security on the trust factor.	H1, H8, H9
4.	Find out whether perceived ease of use and attitude can influence purchase intention.	H4, H5
5.	Determine technological acceptance by Generation Z in Portugal.	H2, H3, H6

The questionnaire developed was composed of four groups of questions, based on the model explained above. The questionnaire was divided as follows:

- First group—demographic characterisation: The first group deals with the demographic characteristics of the respondent. The information collected includes gender, year of birth, complete educational qualifications, region (NUT) where respondents live, monthly income and, finally, professional occupation.
- Second group—online shopping: The second group seeks to understand the relationship between the factors of online shopping and the consumer and thus answer the proposed hypotheses. The aim is to better understand the relationships associated with the factors of personal innovation, self-efficacy, perceived use, perceived ease of use, trust, perceived risk, security, privacy, attitude and purchase intention, using a Likert scale of agreement (1–5), where 1 represents "Totally Disagree" and 5 represents "Totally Agree". It was decided to standardise the scale because, according to Queiroz et al. [55], it is easier to construct and administer and has the great benefit of being easier for respondents to understand. Finally, we sought to understand the current use of e-commerce in Portugal, through the yes/no question "Do you shop online"?
- Third Group—characterisation of the Generation Z digital consumer: The third group portrays the characterisation of the Generation Z digital consumer, and the respondent only had access to this group of questions if the answer given in the question "Do you shop online?" in Section 2 was Yes. The aim of this section is to understand the reasons for liking to shop online, the frequency with which they do so, the amount they spend on these purchases every six months, as well as the number of purchases made online per year. This section also includes categories of products bought online and also aims to understand whether or not these respondents only use this channel to buy products or not.
- Fourth group—reasons for not using e-commerce: Finally, the fourth group examined the main reasons why respondents had never used e-commerce. As in the previous section, a respondent only had access to this group if the answer given to the question "Do you shop online?" in Section 2 was No.

After designing the questionnaire, the consistency test was carried out through Cronbach's alpha analysis using the IBM SPSS Statistics tool. By analysing the result, it was concluded that its consistency was good (Table 2).

Table 2. Cronbach's alpha result and consistency level.

Cronbach's Alpha Result	Alpha Coefficient Range	Strength of Association
0.701	<0.6	Poor
	0.6 to <0.7	Moderate
	0.7 to <0.8	Good
	0.8 to <0.9	Very Good
	0.9>	Excellent

To define the necessary sample that can represent the number of individuals present in Generation Z in Portugal, and consequently, this is the sample essential to completing the study, the Krejcie and Morgan formula was used [66]. After the calculations were carried out, it was concluded that the required number of valid responses to the questionnaire would be 385.

The initial sample consisted of 404 responses, resulting from data collection through a questionnaire carried out between 10 May 2023 and 15 July 2023. As this is a study related to Generation Z, only responses from individuals born between 1997 and 2010 were accepted.

As the questionnaire was online, it was shared in order to obtain the required number of responses required and was distributed digitally, using platforms such as Instagram, Facebook and WhatsApp, as well as by email.

Of the 404 responses to the initial sample, only 401 were used. The exclusion of these three responses was due to the fact that these users did not give their consent to be included in the study and so did not fill in the questionnaire, which only resulted in the information associated with the denial of consent being recorded.

Two statistical tools were used to perform the analysis of the results: IBM SPSS Statistics (https://www.ibm.com/spss, accessed on 1 August 2023) and SmartPLS 4 (https://www.smartpls.com/, accessed on 1 August 2023). The analysis of the results is represented in Section 7 ("Results").

7. Results

7.1. Sample Characterization

This section presents all the statistical treatments applied to the results obtained from the questionnaire, as well as their analysis.

The initial sample consisted of 404 responses, of which three responses were disregarded because these users did not give consent to be included in the study and thus did not complete the questionnaire, which resulted in only the recording of the information associated with the denial of consent.

Of the 401 valid responses, 230 (57.4%) participants were female and 171 (42.6%) were male. Since the scope of this study is related to a specific generation (Generation Z), only responses given by respondents born between 1995 and 2010 were accepted.

When it comes to the completed educational qualifications of the respondents, it can be seen that 155 (38.7%) completed a basic higher education qualification (e.g., Bachelor's degree), thus being in numerical superiority. Next, with 105 respondents (26.2%) of the total sample, secondary education completion was the second most common educational qualification. Furthermore, 46 of the respondents (11.5%) responded that they had completed the third cycle of basic education, 45 (11.2%) responded that they had completed a Master's degree, 26 (6.5%) had completed the second cycle of basic education and 16 of those surveyed (4%) indicated that they had completed post-secondary education. Finally, only eight respondents, representing 2% of the sample, indicated that they had completed a PhD.

Regarding the monthly income of respondents, 40.2% had no income, 22.7% had an income between EUR 1001 and EUR 1500, 20.4% had an income between EUR 476 and EUR 1000, 9.7% had an income of $\leq$EUR 475 and, finally, 7% had an income of more than EUR 1500.

Regarding the region (NUT) where each respondent lived, it appears that 153 responses were obtained from individuals living in the Alentejo region (38.2%), 11 responses were from the Algarve region (2.7%), 18 responses were from the Azores region (4.5%), 37 responses were from the central region (9.2%), 136 responses were from the Lisbon region (33.9%), nine responses were from the Madeira region (2.2%) and 37 responses were from the northern region of the country (9.2%).

Finally, regarding the professional occupations of each of the respondents, it was found that 17 of the respondents were unemployed (4.2%), 5 of the respondents were domestic

workers (1.2%), 6 of the respondents were student workers (1.5%), 155 of the respondents were employed (38.7%), 18 of the respondents were entrepreneurs (4.5%), 168 of the respondents were students (41.9%) and 32 of the respondents were self-employed (8%).

7.2. Constructing Reliability and Validity

This study analysed the measurement model approach to assess the reliability, composite reliability (CR) and average variance extracted (AVE) of the constructs (Table 3). Convergent validation and discriminant validation were also analysed.

Table 3. Cronbach's alpha, composite reliability and average variance extracted (AVE).

Construct	Cronbach's Alpha	Composite Reliability	AVE
ATT	0.770	0.897	0.813
PI	0.791	0.905	0.827
PRIV	0.569	0.759	0.529
RP	0.392	0.240	0.417
SEC	0.392	0.672	0.440
PU	0.734	0.849	0.654

To calculate internal consistency internal reliability, the values of Cronbach's alpha and composite reliability needed to be higher than 0.50 [66]. In the current study, the thresholds were achieved for the ATT, PI, PRIV and PU constructs. For the RP and SEC constructs, this may indicate that some of the items that made up each of these dimensions could have been removed and the analysis repeated. However, there are significant correlations between the items that make up each of the constructs, and this is another way of checking their validity.

Regarding convergence validation, the measurement can be categorised as convergent if the AVE value is greater than 0.5 [56]. According to Table 3, column "AVE", we can conclude that most of the constructs meet the aforementioned criterion. The RP and SEC constructs have an AVE value very close to 0.5 (0.417 and 0.440, respectively), so these constructs were not removed from the model.

Divergent validation was also analysed (Table 4), using the heterotrait–monotrait ratio (HTMT), defined as the average value of the correlations of the indicators between the constructs in relation to the average of the average correlations for the indicators measuring the same construct [57]. The same authors propose a threshold value of 0.90 for models with very similar constructs. An HTMT value above 0.90 would indicate that discriminant validity is not present. When the constructs are conceptually more distinct, the suggested threshold value is <0.85. It can be seen that the divergence validation was verified for all cases, while satisfying the shareholder, with the exception of the values 1.336 and 1.014 in Table 4. Most of the items in the constructs could probably be measuring the same thing, i.e., they could contain overlapping items based on the respondents' perception of the affected constructs.

Table 4. Heterotrait-monotrait ratio (HTMT) matrix.

	ATT	TRU	PEOU	PI	PRIV	RP	SEC	PU
ATT								
TRU	0.391							
PEOU	0.329	0.201						
PI	0.985	0.352	0.420					
PRIV	0.445	0.607	0.363	0.392				
RP	0.531	0.524	0.524	0.695	0.417			
SEC	0.750	0.741	0.449	0.535	1.336	1.014		
PU	0.650	0.22	0.721	0.687	0.532	0.554	0.693	

7.3. Hypothesis

As previously mentioned, the consistency test was carried out through Cronbach's alpha analysis using the IBM SPSS Statistics tool. Through the analysis of the result, it can be concluded that its consistency is good. Through Figure 5, we visualise the calculation of the model used by the PLS algorithm. The first analysis to be carried out was the evaluation of Pearson's coefficients of determination, R^2. According to Lestari [23], the value of R^2 must be at least 0.10 to guarantee a satisfactory model that sufficiently represents the study.

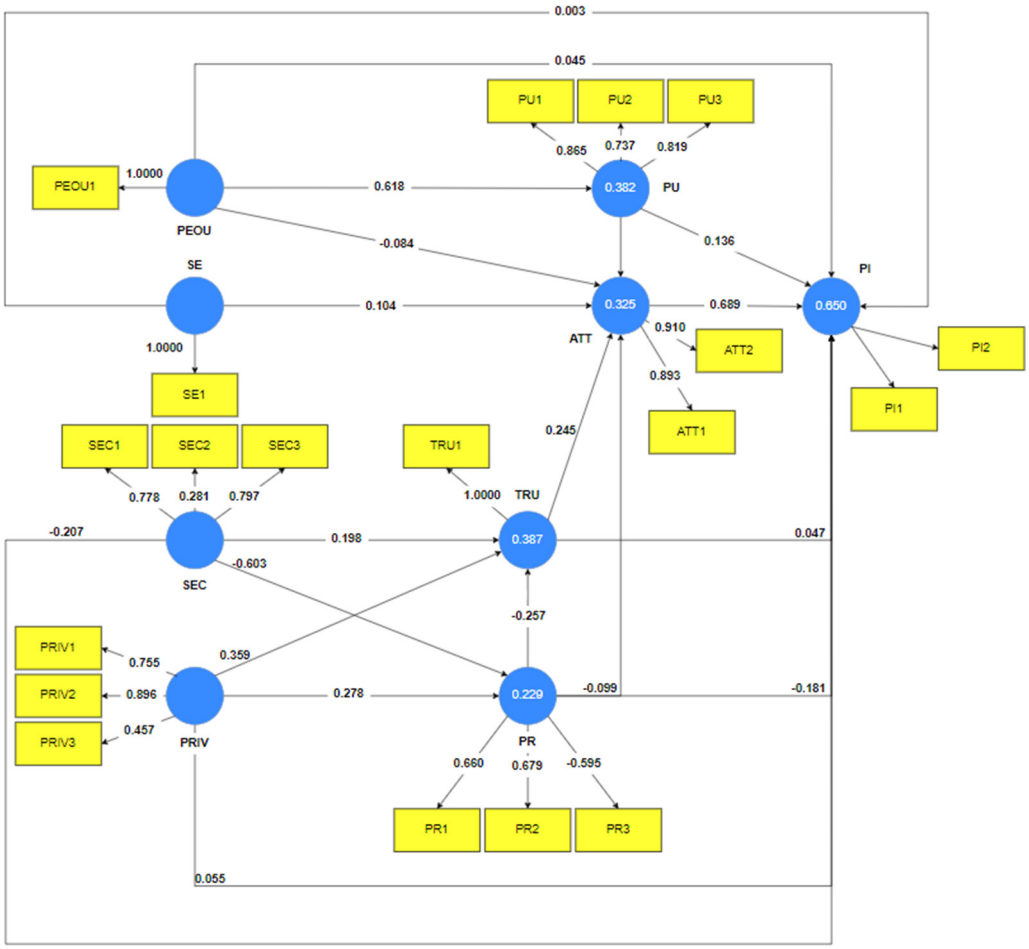

Figure 5. Model calculation using the PLS algorithm.

As seen in Figure 5, the latent variables (blue circles) perceived usefulness (PU), trust (TRU), perceived risk (PR), attitude (ATT) and purchase intention (PI) present a value inside each circle, with the values being 0.382, 0.987, 0.229, 0.325 and 0.659, respectively. In this way, it can be concluded that the model is satisfactory and that it sufficiently represents the study, with all values of R^2 being greater than 0.10. The bootstrapping method was then applied to apply an analysis based on tests of the significance of the t-value and *p*-value and to analyse the strength of the relationships by beta value. The t-value is used to test the significance of the relationship between the independent variables, and there is a relationship between the variables if the t-value is greater than 1.96 [23,67]. In a similar way, the significance of the *p*-value of achievement between the dependent variable and the independent variable was tested, reflecting the degree of compatibility of the data with the null hypothesis. Therefore, a significant relationship is considered to be extant if the *p*-value is less than 0.050 [67]. Table 3 shows the t-, *p*- and beta values extracted using the SmarPLS 4 tool, as well as their associations with each hypothesis studied.

8. Discussion

Based on the results shown in Table 5, the following analysis was carried out based on the analysis performed by Lestari [23]:

Table 5. The t-value, *p*-value and beta value by hypothesis.

Hypotheses Tested	t-Value	*p*-Value	Beta Value
H1: PR−>TRU	1.169	0.242	−0.257
H2: PEOU−>ATT	1.331	0.183	−0.084
H3: PEOU−>PU	9.662	0.000	0.618
H4: PEOU−>PI	1.100	0.271	0.045
H5: ATT−>PI	18.374	0.000	0.689
H7: PRIV−>TRU	6.734	0.000	0.359
H8: PRIV−>PR	1.385	0.166	0.278
H9: SEC−>TRU	2.889	0.004	0.198
H10: SEC−>PR	1.307	0.191	−0.603

- H1: PR−>TRU—Hypothesis 1, which indicates that perceived risk has a negative impact on digital consumer confidence, is not supported. This hypothesis was not supported by the analysis of *p*- and t-values, with the *p*-value being greater than 0.050 and the t-value being less than 1.96, which demonstrates that this relationship is not significant. Although this relationship is not significant, it can be seen, through the beta value, that there is a negative relationship between the variables; that is, a consumer who has a perception of risk may not experience a decrease in their confidence when carrying out online shopping.
- H2: PEOU−>ATT—Hypothesis 2 was rejected; therefore, it is concluded that in Portugal, for Generation Z, the perceived ease of use does not have a positive impact on attitude when utilising an e-commerce platform. This conclusion was reached because the t-value was less than 1.96, and the *p*-value was greater than 0.050. The same results for this hypothesis were also obtained in the study carried out by [68].
- H3: PEOU−>UP—Perceived ease of use has a positive impact on the perceived usefulness related to the use of e-commerce platforms. This is due to the analysis carried out using the values obtained in Table 3, whose t-value is 9.662 (higher than 1.96) and the *p*-value is 0.000 (lower than 0.050), which demonstrates that it is a positive relationship. From the beta value, it can be verified that this is a positive relationship. The same result for this hypothesis is also obtained in the study carried out by Kanchanatanee [69].
- H4: PEOU−>PI—When analysing the significance of the t- and *p*-values, it can be concluded that Hypothesis 4 is not supported, as it is not a significant relationship. The same results for this hypothesis were also obtained in the study carried out by Figueiredo [62]. Although it is not significant, it can be verified, through the analysis of the beta value, that there is a positive relationship between the variables.
- H5: ATT−> PI—Through Table 3, it can be seen that there is a t-value of 18.374 and a *p*-value of 0.000. Since 18.374 is greater than 1.96 and 0.000 is less than 0.050, this relationship is significant. Through the beta value, this is a positive relationship; therefore, it can be concluded that attitude has a positive impact on the intention to utilise an e-commerce platform. A customer's attitude is often associated with emotion and is considered the main predictor of their intention to adopt a technology [34]. The same hypothesis result was also obtained in the study carried out by Ramadania and Aldhmour [70,71].
- H7: TRU−>PR—Through the analysis of the *p*- and t-values, it can be concluded that this hypothesis is rejected at the significance level, with the t-value being lower than 1.96 and the *p*-value being higher than 0.050. When analysing the beta value, it can be verified that these variables present a positive relationship; therefore, it can be stated that online privacy has a positive impact on the risk perceived by the consumer.

- H8: PRIV−>TRU—It can be concluded that online privacy has a positive impact on consumer trust based on the beta value analysis. Despite this value, the t-value is less than 1.96, and the *p*-value is greater than 0.050; therefore, it is not a significant variable, and therefore this hypothesis is rejected.
- H9: SEC−>TRU—It can be concluded that online privacy has a positive impact on consumer trust based on the beta value analysis. Despite this value, the t-value is less than 1.96, and the *p*-value is greater than 0.050; therefore, it is not a significant variable, and therefore this hypothesis is rejected.
- H10: SEC−>PT—Based on the analysis of the t (1.307)- and *p* (0.191)- values, it is considered that the hypothesis is not supported, as it appears that the t-value is lower than 1.96 and the *p*-value is higher than 0.050. With the analysis of the beta value, it is verified that these variables present a negative relationship. Thus, it is considered that for Generation Z consumers in Portugal, security has a negative impact on perceived risk; that is, the safer the consumer feels, the lower the perception of risk.

Finally, it remains to analyse Hypothesis 6, which indicates that purchase intention has a positive impact on the current use of e-commerce platforms.

The chi-square was tested out with the following hypotheses to ensure its validation, based on the analysis by Samuels [72]:

H0: *Purchase intention does not have a positive impact on the current use of e-commerce platforms.*

H1: *Purchase intention has a positive impact on the current use of e-commerce platforms.*

The chi-square test checks whether there is any correlation between non-numeric variables frequently used in statistical studies [73]. Samuels [72] states that before carrying out the above test, the following requirement must be met:

- If, at most, 20% of the frequencies are less than five and none are less than 1, then the assumption is fulfilled.

In this way, we can analyse results obtained through the chi-square test. The chi-square test value is 8.711, with an asymptotic significance (bilateral) of 0.069 and dfs (degrees of freedom) equal to 4. When purchasing the calculated chi-square value and the tabulated chi-square value (table in the paper by Lopes Ferreira [74]), it can be concluded that the estimated value is higher than the tabulated one, thus rejecting the null hypothesis. In this way, it can be seen that Hypothesis 6 is supported. Therefore, in Table 6, a summary of the relationship between the proposed hypotheses and the results obtained is shown.

Table 6. Hypothesis test results.

Hypotheses Tested	Result
H1: PR−>TRU	Rejected
H2: PEOU−>ATT	Rejected
H3: PEOU−>PU	Supported
H4: PEOU−>PI	Rejected
H5: ATT−>PI	Supported
H6: PI−>CU	Supported
H7: PRIV−>PR	Supported
H8: PRIV−>TRU	Rejected
H9: SEC−>TRU	Supported
H10: SEC−>PR	Rejected

9. Conclusions

In recent years, e-commerce has grown exponentially, emerging as one of the most important markets for goods/services. However, despite this growth, the necessary value for the prevalence of this practice in the Western world has yet to be reached. Generation Z is a more technological generation, covering an age group that includes teenagers and

young adults. They have more purchasing power as they go through this transition, and some of them are joining the job market.

Through the analysis of results, carried out with a valid sample of 401 participants, it was possible to analyse the proposed hypotheses, learn more about this generation's digital consumption, and define their profile as consumers. Regarding the defined proposals (H1 to H10), and with the help of the SmartPLS 4 and IBM SPSS Statistics tools, it was possible to conclude that Hypotheses H3, H5, H6 and H9 were supported. Therefore, we can state that for Generation Z consumers in Portugal, the easier it is to use an e-commerce platform, the greater their perception of its usefulness will be; the more positive their attitude, the greater their intention to use this platform; the safer this consumer feels, the greater their confidence in making online purchases will be; and, finally, the greater their intention to use this technology, the greater the probability of them actually using the e-commerce platforms and engaging in online purchasing activity.

Regarding H5, we found that the attitude variable positively influenced the intention to use. Therefore, we infer that self-efficacy, personal innovation applied to information technology, perceived usefulness, trust and perceived risk also present a positive relationship to the use of technology. This relationship is a result of these variables influencing attitude. Therefore, if attitude positively influences the intention to use a platform, so do the previously mentioned variables. The remaining five hypotheses were rejected for the variables' lack of significant relationships.

Regarding the Generation Z digital consumer profile in Portugal, there are no differences between specific birth years for this generation. Individuals with educational qualifications and a monthly income make online purchases in all regions (NUT). Most of these consumers are female, representing 58.6% of the sample. Despite this majority, male consumers also make considerable use of e-commerce, with a total of 171 male respondents, approximately 93%, indicating that they make online purchases.

These consumers are more technologically confident and, therefore, believe that they deal well with most digital technologies. They indicate that e-commerce platforms are easy to use, they do not consider making online purchases to be risky, and they also consider purchasing online to be safe.

Despite feeling comfortable in this regard, they are consumers who are aware and concerned about possible online threats, more specifically, security and privacy threats. In general, it is stated that these consumers make online purchases every six months, spending between EUR 21 and EUR 70 during this period. Despite indicating a semi-annual frequency, they also suggest that they make purchases between five and six times per year (31%) or more than eight times per year (40%). Regarding motivation, it was found that consumers of this generation value convenience, availability (24 h) and the variety of products and services that e-commerce platforms provide.

When it comes to the categories of products most purchased online by this type of consumer, it was found that the clothing category stands out the most. Then, with less frequency, consumers make online purchases such as travel, accommodation/hotels, films, books or music, events, and finally, food. Hence, we can see that this generation's consumer does not only shop digitally, with most respondents making purchases both online and through the more traditional method in a physical store.

This study aims to contribute to a deeper understanding of the acceptance of e-commerce in Portugal by Generation Z, as well as defining the digital consumer profile of this age group. It is also hoped that it will be useful for understanding this type of consumer, contributing recent data on this subject, allowing for an increase in knowledge at a national level, and this information can be used at both an academic and business level, specifically on the themes of e-commerce and technological acceptance, thus allowing companies to see how Generation Z views the market and improve their business strategy.

One of the limitations is that not all the relationships in the proposed model were validated due to the fact that it was quite extensive, and these relationships were affected by inference. The other limitation considered is that some less efficient constructs were

kept for this model in the "Constructing Reliability and Validity" section, which could have resulted in a more adjusted and meaningful model.

In future investigations, it would be pertinent to apply this analysis model to the remaining existing generations to compare the results obtained in this study with those obtained in other generations, thus verifying if they present similar behaviour. The same analysis could be carried out in another country to understand whether this generation has the same acceptance and an identical digital consumer profile there. Testing all variables and their relationships in future research is considered pertinent. Finally, future investigations may consider e-commerce in terms of gaming/streaming products. This was one of the categories that was not included in the survey. However, of those types that were not included, it was among the most suggested by respondents. This study could be replicated with a larger sample, with a need for greater attention to be paid to the items that are retained or eliminated in each of the constructs, dimensions or latent variables, thus revising the analysis carried out in the "Constructing Reliability and Validity" section until a more adjusted and meaningful model is achieved.

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Appendix A

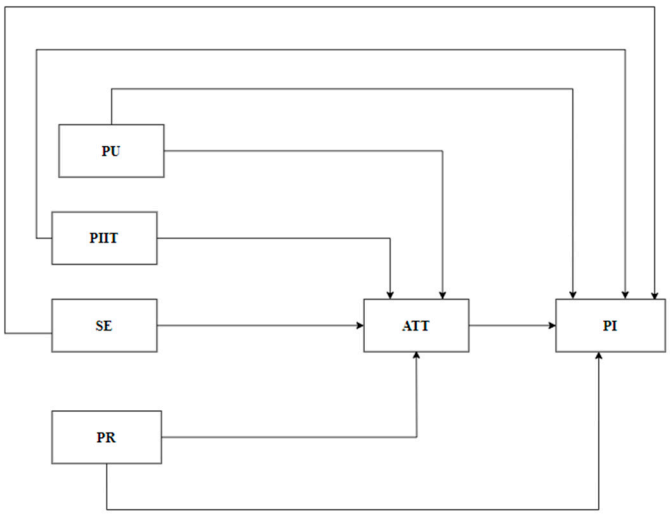

Figure A1. Model defined by Lestari [23]. Abbreviations: PIIT—personal innovation applied to information technology; SE—self-efficacy; PU—perceived usefulness; PR—perceived risk; ATT—attitude; PI—purchase intention.

References

1. Yepes Chamorro, J.; Salgado Rodríguez, O.; Valencia-Arias, A.; López, J.; Mejía Ordóñez, J.P. Factors for the Adoption of E-Shopping Among the Juvenile Colombian Population: *A* Case Study. *Semest. Económico* **2019**, *22*, 163–188. [CrossRef]
2. Zerbini, C.; Bijmolt, T.H.A.; Maestripieri, S.; Luceri, B. Drivers of Consumer Adoption of E-Commerce: A Meta-Analysis. *Int. J. Res. Mark.* **2022**, *39*, 1186–1208. [CrossRef]

3. Kemp, S. Digital 2022: Global Overview Report. DataReportal. Available online: https://datareportal.com/reports/digital-2022-global-overview-report (accessed on 1 June 2023).
4. De Marco, S.; Robles, J.M.; Antino, M.; Fernandez, E.G. Influence of Abilities for Searching Commercial Information Online on E-Shopping: When Inequality Affects Business. *J. Glob. Compet. Governability* **2016**, *10*, 136–152. [CrossRef]
5. Instituto Nacional de Estatística—Web Portal. Available online: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUE (accessed on 1 June 2023).
6. Digital 2022: Portugal. DataReportal—Global Digital Insights. Available online: https://datareportal.com/reports/digital-2022-portugal?rq=portugal (accessed on 1 June 2023).
7. Veybitha, Y.; Alfansi, L.; Salim, M.; Darta, E. Critical Review: Factors Affecting Online Purchase Intention Generation Z. *J. Int. Conf. Proc.* **2021**, *4*, 354–363. [CrossRef]
8. Vieira, J.; Frade, R.; Ascenso, R.; Prates, I.; Martinho, F. Generation Z and Key-Factors on E-Commerce: A Study on the Portuguese Tourism Sector. *Adm. Sci.* **2020**, *10*, 103. [CrossRef]
9. de Almeida Barreto da Costa, M.N.; As Motivações para a Compra Online: Comportamento de Compra Do Consumidor Digital. PhD Thesis. 2018. Available online: https://bit.ly/369o8s9 (accessed on 1 June 2023).
10. Da Silva Santos Baptista da, C.F.M. A Influência Do Marketing Digital no Comportamento de Compra Online. PhD Thesis, Instituto Politécnico do Porto, Porto, Portugal, 2021.
11. Jílková, P.; Králová, P. Customer insights and online shopping attitude of gen-Z. In Proceedings of the 14th International Days of Statistics and Economics, Prague, Czech Republic, 10–12 September 2020; pp. 408–417.
12. Thangavel, P.; Pathak, P.; Chandra, B. Consumer decision-making style of gen Z: A generational cohort analysis. *Glob. Bus. Rev.* **2022**, *23*, 710–728. [CrossRef]
13. Thuy, D.C.; Lien, N.T.; My, D.P.Y. Factors Affecting Gen Z Customers' Satisfaction with Sales Promotions of Vietnam E-Commerce Platforms. *Vnu J. Econ. Bus.* **2022**, *2*, 83–94. [CrossRef]
14. Rudolph, C.W.; Rauvola, R.S.; Zacher, H. Leadership and generations at work: A critical review. *Leadersh. Q.* **2018**, *29*, 44–57. Available online: https://www.sciencedirect.com/science/article/pii/S1048984316301771 (accessed on 1 June 2023). [CrossRef]
15. Ramadlani, A.K.; Wibisono, M. Visual literacy and character education for alpha generation. In Proceedings of the International Seminar on Language, Education, and Culture ISoLEC, Faculty of Letters, Universitas Negeri Malang, Malang, Indonesia, 7 November 2017; pp. 1–7.
16. Dewi, A.S.; Rohman, F.; Hapsari, R.D. The antecedents of repurchase intention in Indonesian e-commerce marketplace customers during the COVID-19 pandemic with age as a moderating variable: A study on e-commerce marketplace customers in Java. *Int. J. Res. Bus. Soc. Sci.* **2022**, *11*, 33–45. [CrossRef]
17. Tan, P.J.; Hsu, M.H. Designing a system for English evaluation and teaching devices: A PZB and TAM model analysis. *Eurasia J.Math. Sci. Technol. Educ.* **2018**, *14*, 2107–2119. [CrossRef]
18. Cidades, E.C.E. Os Impactos da COVID-19 na Utilização do E-Commerce. Master's Thesis, Universidade de Lisboa, Lisboa, Portugal, 2020.
19. Alves, D.F.M. Estudo Comparativo dos Fatores que Influenciam a Intenção de Compra do Consumidor em Plataformas de E-Commerce e M-Commerce. PhD Thesis, Universidade Europeia, Lisboa, Portugal, 2016.
20. Beselga, D.F.P. Aplicação do Modelo de Aceitação de Tecnologia (TAM) em SAP Fiori. Master's Thesis, Instituto Universitário de Lisboa, Lisboa, Portugal, 2018.
21. Chakraborty, S.; Soodan, V. Examining utilitarian and hedonic motivations in online shopping in India: Moderating effect of product browsing behavior. *Int. J. Recent Technol. Eng.* **2019**, *8*, 117–125.
22. Valencia, D.C.; Alejandro, V.A.; Bran, L.; Benjumea, M.; Valencia, J. Analysis of E-Commerce Acceptance Using the Technology Acceptance Model. Scientific Papers of the University of Pardubice. Series D, Faculty of Economics and Administration. 45/2019. 2019. Available online: https://editorial.upce.cz/1804-8048/27/1/984 (accessed on 1 July 2023).
23. Lestari, D. Measuring E-Commerce Adoption Behaviour among Gen-Z in Jakarta, Indonesia. *Econ. Anal. Policy* **2019**, *64*, 103–115. [CrossRef]
24. Alturas, B. Models of acceptance and use of technology: Research trends in the 21st century. In Proceedings of the 19th Portuguese Association of Information Systems Conference, Lisbon, Portugal, 11–12 October 2019.
25. Porto Editora. Inferência. Infopédia; Dicionários Porto Editora. Available online: https://www.infopedia.pt/dicionarios/lingua-portuguesa/infer%C3%AAncia (accessed on 1 July 2023).
26. Singh, S.; Srivastava, S. Engaging Consumers in Multichannel Online Retail Environment. *J. Model. Manag.* **2019**, *14*, 49–76. [CrossRef]
27. Wardana, L.W.; Narmaditya, B.S.; Wibowo, A.; Mahendra, A.M.; Wibowo, N.A.; Harwida, G.; Rohman, A.N. The impact of entrepreneurship education and students' entrepreneurial mindset: The mediating role of attitude and selfefficacy. *Heliyon* **2020**, *6*, e04922. [CrossRef]
28. Eraslan Yalcin, M.; Kutlu, B. Examination of Students' Acceptance of and Intention to Use Learning Management Systems Using Extended TAM. *Br. J. Educ. Technol.* **2019**, *50*, 2414–2432. [CrossRef]
29. Lee, Y.-K. Impacts of Digital Technostress and Digital Technology Self-Efficacy on Fintech Usage Intention of Chinese Gen Z Consumers. *Sustainability* **2021**, *13*, 5077. [CrossRef]

30. Islam, H.; Jebarajakirthy, C.; Shankar, A. An Experimental Based Investigation into the Effects of Website Interactivity on Customer Behavior in On-Line Purchase Context. *J. Strateg. Mark.* **2019**, *29*, 1–24. [CrossRef]
31. Song, Y.W. (Greg); Lim, H.S.; Oh, J. We Think You May like This": An Investigation of Electronic Commerce Personalization for Privacy-Conscious Consumers. *Psychol. Mark.* **2021**, *38*, 1723–1740. [CrossRef]
32. Rao, P.; Balasubramanian, S.; Vihari, N.; Jabeen, S.; Shukla, V.; Chanchaichujit, J. The E-Commerce Supply Chain and Environmental Sustainability: An Empirical Investigation on the Online Retail Sector. *Cogent Bus. Manag.* **2021**, *8*, 1938377. [CrossRef]
33. Saleem, A.; Aslam, J.; Kim, Y.B.; Nauman, S.; Khan, N.T. Motives towards e-Shopping Adoption among Pakistani Consumers: An Application of the Technology Acceptance Model and Theory of Reasoned Action. *Sustainability* **2022**, *14*, 4180. [CrossRef]
34. Jaiswal, D.; Kaushal, V.; Kant, R.; Kumar Singh, P. Consumer Adoption Intention for Electric Vehicles: Insights and Evidence from Indian Sustainable Transportation. *Technol. Forecast. Soc. Chang.* **2021**, *173*, 121089. [CrossRef]
35. Hua, L.; Wang, S. Antecedents of Consumers' Intention to Purchase Energy-Efficient Appliances: An Empirical Study Based on the Technology Acceptance Model and Theory of Planned Behavior. *Sustainability* **2019**, *11*, 2994. [CrossRef]
36. Teck, C.L.; Ng, C.Y.D. Online Food Delivery Services: Making Food Delivery the New Normal. *J. Mark. Adv. Pract.* **2020**, *1*, 62–77.
37. Shi, S.; Wang, Y.; Chen, X.; Zhang, Q. Conceptualization of Omnichannel Customer Experience and Its Impact on Shopping Intention: A Mixed-Method Approach. *Int. J. Inf. Manag.* **2020**, *50*, 325–336. [CrossRef]
38. Hu, Z.; Ding, S.; Li, S.; Chen, L.; Yang, S. Adoption Intention of Fintech Services for Bank Users: An Empirical Examination with an Extended Technology Acceptance Model. *Symmetry* **2019**, *11*, 340. [CrossRef]
39. Bonnin, G. The roles of perceived risk, attractiveness of the online store and familiarity with AR in the influence of AR on patronage intention. *J. Retail. Consum. Serv.* **2020**, *52*, 101938. [CrossRef]
40. Rosillo-Díaz, E.; Blanco-Encomienda, F.J.; Crespo-Almendros, E. A Cross-Cultural Analysis of Perceived Product Quality, Perceived Risk and Purchase Intention in E-Commerce Platforms. *J. Enterp. Inf. Manag.* **2019**, *33*, 139–160. [CrossRef]
41. Kamalul Ariffin, S.; Mohan, T.; Goh, Y.-N. Influence of Consumers' Perceived Risk on Consumers' Online Purchase Intention. *J. Res. Interact. Mark.* **2018**, *12*, 309–327. [CrossRef]
42. Fortes, N.; Rita, P. Privacy Concerns and Online Purchasing Behaviour: Towards an Integrated Model. *Eur. Res. Manag. Bus. Econ.* **2016**, *22*, 167–176. [CrossRef]
43. Merhi, M.; Hone, K.; Tarhini, A. A Cross-Cultural Study of the Intention to Use Mobile Banking between Lebanese and British Consumers: Extending UTAUT2 with Security, Privacy and Trust. *Technol. Soc.* **2019**, *59*, 101151. [CrossRef]
44. Ventre, I.; Kolbe, D. The Impact of Perceived Usefulness of Online Reviews, Trust and Perceived Risk on Online Purchase Intention in Emerging Markets: A Mexican Perspective. *J. Int. Consum. Mark.* **2020**, *32*, 1–13. [CrossRef]
45. Nguyen, T.T.H.; Nguyen, N.; Nguyen, T.B.L.; Phan, T.T.H.; Bui, L.P.; Moon, H.C. Investigating Consumer Attitude and Intention towards Online Food Purchasing in an Emerging Economy: An Extended TAM Approach. *Foods* **2019**, *8*, 576. [CrossRef] [PubMed]
46. Girsang, M.J.; Candiwan; Hendayani, R.; Ganesan, Y. Can Information Security, Privacy and Satisfaction Influence the E-Commerce Consumer Trust? In Proceedings of the International Conference of Information and Communication Technology (ICoICT), Yogyakarta, Indonesia, 24–26 June 2020. [CrossRef]
47. Badotra, S.; Sundas, A. A Systematic Review on Security of E-Commerce Systems. *Int. J. Appl. Sci. Eng.* **2021**, *18*, 1–19. [CrossRef]
48. Azam, A.; Qiang, P.F.; Abdullah, M.I. Consumers' E-Commerce Acceptance Model: Antecedents of Trust and Satisfaction Constructs. In Proceedings of the 2012 IEEE Business Engineering and Industrial Applications Colloquium (BEIAC), Kuala Lumpur, Malaysia, 7–8 April 2012. [CrossRef]
49. Marseto, F.; Handayani, P.W.; Pinem, A.A. Push, Pull, and Mooring Evaluation of User Switching Intention from Social Commerce to E-Commerce. In Proceedings of the 2019 International Conference on Information Management and Technology (ICIMTech), Jakarta/Bali, Indonesia, 19–20 August 2019. [CrossRef]
50. Gautam, S.; Kumar, U.; Agarwal, S. Study of Consumer Intentions on Using Mobile Wallets Using TAM Model. In Proceedings of the 2020 8th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), Noida, India, 4–5 June 2020. [CrossRef]
51. Miandari, G.A.K.D.D.; Yasa, N.N.K.; Wardana, M.; Giantari, I.G.A.K.; Setini, M. Application of Technology Acceptance Model to Explain Repurchase Intention in Online Shopping Consumers. *Webology* **2021**, *18*, 247–262. [CrossRef]
52. Zhu, R.; Srivastava, A.; Sutanto, J. Privacy-Deprived E-Commerce: The Efficacy of Consumer Privacy Policies on China's E-Commerce Websites from a Legal Perspective. *Inf. Technol. People* **2020**, *33*, 1601–1626. [CrossRef]
53. Sagnier, C.; Loup-Escande, E.; Lourdeaux, D.; Thouvenin, I.; Valléry, G. User Acceptance of Virtual Reality: An Extended Technology Acceptance Model. *Int. J. Hum. Comput. Interact.* **2020**, *36*, 1–15. [CrossRef]
54. Ariff, M.S.M.; Sylvester, M.; Zakuan, N.; Ismail, K.; Ali, K.M. Consumer Perceived Risk, Attitude and Online Shopping Behaviour; Empirical Evidence from Malaysia. *IOP Conf. Ser. Mater. Sci. Eng.* **2014**, *58*, 012007. [CrossRef]
55. De Queiroz, L.; Moura, P. Determinantes da atitude e seus impactos no comportamento de compra online do público com mais de 50 anos: Um estudo feito no brasil. PhD Thesis, Universidade de Coimbra, Coimbra, Portugal, 2018.
56. Daud, I.; Nurjannahe, D.; Mohyi, A.; Ambarwati, T.; Cahyono, Y.; Haryoko, A.E.; Handoko, A.L.; Putra, R.S.; Wijoyo, H.; Ariyanto, A.; et al. The Effect of Digital Marketing, Digital Finance and Digital Payment on Finance Performance of Indonesian SMEs. *Int. J. Data Netw. Sci.* **2022**, *6*, 37–44. [CrossRef]

57. Hair, J.F., Jr.; Hult, G.T.; Ringle, C.M.; Sarstedt, M.; Danks, N.P.; Ray, S. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Classroom Companion: Business*; Springer: Cham, Switzerland, 2021.
58. Uakarn, C.; Chaokromthong, K.; Sintao, N. Sample Size Estimation using Yamane and Cochran and Krejcie and Morgan and Green Formulas and Cohen Statistical Power Analysis by G*Power and Comparisions. *APHEIT Int. J.* **2021**, *10*, 76–88.
59. Jackson, J.D.; Yi, M.Y.; Park, J.S. An Empirical Test of Three Mediation Models for the Relationship between Personal Innovativeness and User Acceptance of Technology. *Inf. Manag.* **2013**, *50*, 154–161. [CrossRef]
60. Vahdat, A.; Alizadeh, A.; Quach, S.; Hamelin, N. Would You like to Shop via Mobile App Technology? The Technology Acceptance Model, Social Factors and Purchase Intention. *Australas. Mark. J. (AMJ)* **2020**, *29*, 187–197. [CrossRef]
61. Da Silva Vilar, M.A. Modelo de Aceitação da Tecnologia Adaptado às Compras Online. PhD Thesis, Universidade Fernando Pessoa, Porto, Portugal, 2013.
62. De Amaral Figueiredo, S. Comportamento de Compra Online da Geração Y em Portugal. PhD Thesis, Universidade de Lisboa, Lisboa, Portugal, 2015.
63. Ferreira, A.S.F. O Comportamento do Consumidor Feminino na Compra Online de Vestuário. PhD Thesis, IPAM, Porto, Potugal, 2016.
64. Bravo, R.A.G. E-Commerce: A Influência da Confiança na Intenção de Compra Online. PhD Thesis, Instituto Politécnico de Lisboa, Escola Superior de Comunicação Social,, Lisboa, Portugal, 2017.
65. Pincho, P.M.P.S. Perceção Individual Sobre a Transmissibilidade dos Dados Pessoais no Online. Master's Thesis, Instituto Universitário de Lisboa, Lisboa, Portugal, 2022.
66. Haji-Othman, Y.; Yusuff, M.S.S. Assessing Reliability and Validity of Attitude Construct Using Partial Least Squares Structural Equation Modeling (PLS-SEM). *Int. J. Acad. Res. Bus. Soc. Sci.* **2022**, *12*, 378–385. [CrossRef] [PubMed]
67. Andrade, C. The P Value and Statistical Significance: Misunderstandings, Explanations, Challenges, and Alternatives. *Indian J. Psychol. Med.* **2019**, *41*, 210. [CrossRef] [PubMed]
68. Suryawirawan, O.A. The Effect of College Students' Technology Acceptance on E-Commerce Adoption. *BISMA (Bisnis Dan Manaj.)* **2021**, *14*, 46–62. [CrossRef]
69. Kanchanatanee, K.; Suwanno, N.; Jarernvongrayab, A. Effects of Attitude toward Using, Perceived Usefulness, Perceived Ease of Use and Perceived Compatibility on Intention to Use E-Marketing. *J. Manag. Res.* **2014**, *6*, 1. [CrossRef]
70. Ramadania, S.; Braridwan, Z. The Influence of Perceived Usefulness, Ease of Use, Attitude, Self-Efficacy, and Subjective Norms Toward Intention to Use Online Shopping. The Influence of Perceived Usefulness, Ease of Use, Attitude, Self-Efficacy, and Subjective Norms Toward Intention to Use Online Shopping. *Int. Bus. Account. Res. J.* **2019**, *3*. [CrossRef]
71. Fairouz, A.; Isra, S. An Investigation of Factors Influencing Consumers' Intention to Use Online Shopping: An Empirical Study in South of Jordan. *J. Internet Bank. Commer.* **2016**, *21*, 1.
72. Samuels, P.; Gilchrist, M. Chi-Squared Test for Two-Way Tables. 2014. Available online: https://www.researchgate.net/publication/275027481_Chi-Squared_Test_for_Two-Way_Tables (accessed on 1 July 2023).
73. Sölpük, T.N. Karl Pearson's Chi-Square Tests. *Educ. Res. Rev.* **2020**, *16*, 575–580.
74. Ferreira, P.L. Estatística descritiva e inferencial: Breves notas. 2005. Available online: https://baes.uc.pt/bitstream/10316/9961/1/AP200501.pdf (accessed on 1 August 2023).