



## INTRODUCTION

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The development of technology has generated radical changes in consumers' habits and behaviors (Ijaz et al., 2016). The global population's experiences during the pandemic, which brought the world to a standstill, have accelerated the advancement of electronic commerce (Sajid et al., 2022). This situation forced emerging countries, which had been slowly integrating digital tools, to accelerate the process and incorporate them into commercial activities. These strategies are essential today to meet the needs and demands of modern customers.

The studies carried out on the purchase decision have now turned to the digital environment, involving new generations, such as boomers, millennials, and centennials, who use social networks, applications, and online channels to make purchases (Rojas et al., 2020; Zirena-Bejarano et al., 2023). This context is of significant interest to companies because it currently represents the segment driving the market (Melović et al., 2021; Nurcahyono & Hanifah, 2023). During this transition, consumers search for internal information, which they may retain from positive or negative cognitive experiences related to a product or service, to inform their purchase decisions. Individuals seek external information when this information is insufficient (Schiffman & Kanuk, 2014). Gobinath and Gupta (2016) explain that individual reviews become consumers' information sources, impacting their decision-making process. Moreover, clients can quickly obtain vast information from the web, leading them to quickly compare prices, characteristics, and other people's experiences (Nurcahyono & Hanifah, 2023).

Among the purchase decision process determinants is the consumer's attitude, which identifies the value judgment the individual makes in a given situation, affecting their behavior (Fishbein, 1963) and identifying its affective, cognitive, and behavioral components (Maloney et al., 1975). The affective component generates a feeling that can be positive or negative; in the cognitive component, the consumer recognizes the need to acquire knowledge about the stimulus received, and so does the learning process. Finally, in the behavioral component, the consumer initiates and acts as the stimulus based on acquired knowledge (Abarna et al., 2023; Daems et al., 2019; Kowalczyk & Mitchell, 2022).

In analyzing the digital context, the previous review has generated changes in consumer behavior, especially in younger generations more predisposed to electronic commerce (Rojas et al., 2020). However, older generations fear the different risks generated by online operations (Nicolaou, 2023), and therefore, they prefer to buy in physical stores (Makhitha & Ngobeni, 2021). However, some studies have revealed a negative or non-significant effect of consumer attitude on purchasing decisions (Yin et al., 2020). Given this, we propose incorporating the influence of friends and reference groups into the study. According to social identity theories, an individual's transmission

73 of information influences their peers, and the intensity or intensity of arguments  
74 determines the generation of favorable or unfavorable reactions (Wood, 2000). In  
75 addition, the concept of social value identifies individuals' concern for the impression  
76 they make on peer groups (Biswas & Roy, 2015).

77 On the other hand, Ding et al. (2020) argue that reference groups are an essential  
78 factor in the purchase decision in digital communities. Han and Kim (2018) assert that  
79 friends play a crucial role in people's lives, serving as a vital source of information that  
80 facilitates viable purchasing decisions. To our knowledge, there is no evidence of  
81 previous studies that analyzed such variables as mediators, creating a gap in the literature.  
82 In that sense, we believe that their recommendations strengthen individuals' preferences,  
83 particularly in younger generations, who are characterized by being more sociable, as  
84 stated by Dalziel & De Klerk (2020). Both constructs significantly influence customers'  
85 behavior during online decision-making (Al-Swidi et al., 2014). On the other hand,  
86 Hoonsopon and Puriwat (2016) argue that reference groups have a diverse impact on  
87 purchase intention under different drivers. This information generates interest in further  
88 research on the effect of these constructs on the purchase decision in digital environments,  
89 given that commercial activity is focusing on this context.

90 The current research's stated objectives highlight its significance. First, it aims to  
91 analyze the effect of consumer attitude on the online purchase decision. Second, it aims  
92 to determine the mediating role of friends in the relationship between consumer attitude  
93 and the purchase decision. Third, it aims to determine the mediating role of reference  
94 groups in the relationship between consumer attitude and online purchase decisions,  
95 answering whether this effect is consistent in online purchase transactions. The main  
96 contribution to the literature is the study of the theory linking consumer attitude to online  
97 purchase decisions, filling the gap in studies that address the effect of consumer attitude  
98 on purchase decisions in the digital medium in developing countries, as well as deepening  
99 the study for a better understanding of the influence of friends and reference groups on  
100 the online purchase decision.

101 The work is divided into five sections. The first section introduces the work, the  
102 second section develops the theoretical framework and hypothesis approach, and the third  
103 section proposes the research methodology. Then, the discussion of results and  
104 conclusions includes the theoretical and empirical implications, limitations, and future  
105 lines of research.

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## **THEORETICAL BACKGROUND**

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### **Online Purchase Decision**

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The evolution of electronic commerce has led to the development of the purchasing  
decision process in digital environments, where customers can select between two or

111 more available alternatives (Schiffman & Kanuk, 2014). This process recognizes two  
112 currents, according to the theory. This process recognizes two currents, according to the  
113 theory. Al-Abdallah et al. (2021) base the first process on rational decision-making,  
114 which involves identifying the problem or lack and evaluating alternatives before making  
115 a final decision. The other current study explores decision-making, proven through  
116 consumer behavior analysis, including purchasing attitudes (Dortyol et al., 2018; Li,  
117 2014).

118 In this context, the decisions made by individuals in the virtual environment require  
119 information on characteristics, prices, quality, and forms of payment, among others, that  
120 enable them to make the final decision more easily (Dewi et al., 2020; Karimi et al., 2018).  
121 Social networks, web pages, applications, and other technological tools quickly provide  
122 this information (Huang & Benyoucef, 2017; Patro, 2023). Specifically, the quality, trust,  
123 and credibility of information found and shared on the web influence purchasing  
124 decisions (Bai et al., 2019). Moreover, younger generations value convenience in time  
125 and space to obtain references for products that facilitate the evaluation stage (Ruiz Mafé  
126 & Sanz Blas, 2006; Zirena-Bejarano et al., 2022).

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### 128 **Attitude**

129 According to consumer behavior, attitude is considered a determinant, defined as  
130 the individual's evaluation in response to a stimulus (Ajzen & Fishbein, 1977). This  
131 evaluation can be positive or negative (Amaro & Duarte, 2015). Attitude refers to  
132 preferences, viewpoints, and feelings toward a particular product (Kotler & Amstrong,  
133 2013; Ni & Ueichi, 2024). Additionally, Wu and Tsai (2017) suggested attitudes,  
134 according to the ABC model, have three fundamental components: affect, which refers  
135 to how the consumer feels about a product; behavior, which reflects the individual's  
136 intentions to act towards the object; and cognition, which represents the beliefs the  
137 customer holds about the product. These components can be summarized as the knowing,  
138 feeling, and acting of the client over the product (Khalil et al., 2020)

139 Many studies have examined attitudes as a component of the theory of planned  
140 behavior (TPB), which asserts that personal attitudes, social norms, and a sense of control  
141 condition an individual's behavior (Ajzen, 1991; Zirena-Bejarano & Chávez Zirena,  
142 2023). However, some authors suggest that it is very complex to explain the relationship  
143 between attitude and consumer behavior (Wu et al., 2018) because it leaves out the  
144 affective and behavioral aspects (Chou et al., 2020; Raab et al., 2018). We should also  
145 consider an individual's attitude toward online marketing based on the risks they must  
146 assume when entering e-commerce (Makhitha & Ngobeni, 2021; Zirena-Bejarano et al.,  
147 2023). Therefore, we propose conducting further research to address this cognitive gap  
148 based on the following hypothesis:

149 **H1:** The consumer's attitude positively and significantly affects the online purchase  
150 decision.

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## 152 **Friends**

153 Humans are social entities that need to communicate and share experiences. They  
154 also observe and imitate others' behavior to fulfill their desire for acceptance (Hammerl  
155 et al., 2016), which engages them in social influence (Salazar et al., 2013). This influence  
156 reaches virtual media, where recommendations have become essential for consumers to  
157 evaluate in the decision process (Kietzmann et al., 2011). Today's consumers, especially  
158 the younger generations, spend significant time searching for information on the web. On  
159 social networks, they share information with friends, co-workers, or study colleagues,  
160 indicating the importance they place on their opinions (Marino & Lo Presti, 2019;  
161 Pacheco et al., 2017). Studies have demonstrated that friends' opinions make the  
162 recommendations more credible than information transmitted by the company (Errmann  
163 et al., 2019; Willemsen et al., 2012). Furthermore, the opinions of other significant  
164 individuals can also influence purchase decisions, such that consumers may decide not to  
165 purchase a product due to fear of disapproval from friends (Thompson et al., 2017). On  
166 the other hand, Fei et al. (2020) maintain that the influence of friends and family can have  
167 a divergent effect on consumers' purchase decisions. Based on these arguments, the  
168 following hypothesis is proposed.

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170 **H2:** Friends mediate the relationship between consumer attitude and online purchase  
171 decisions.

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## 173 **Groups of reference**

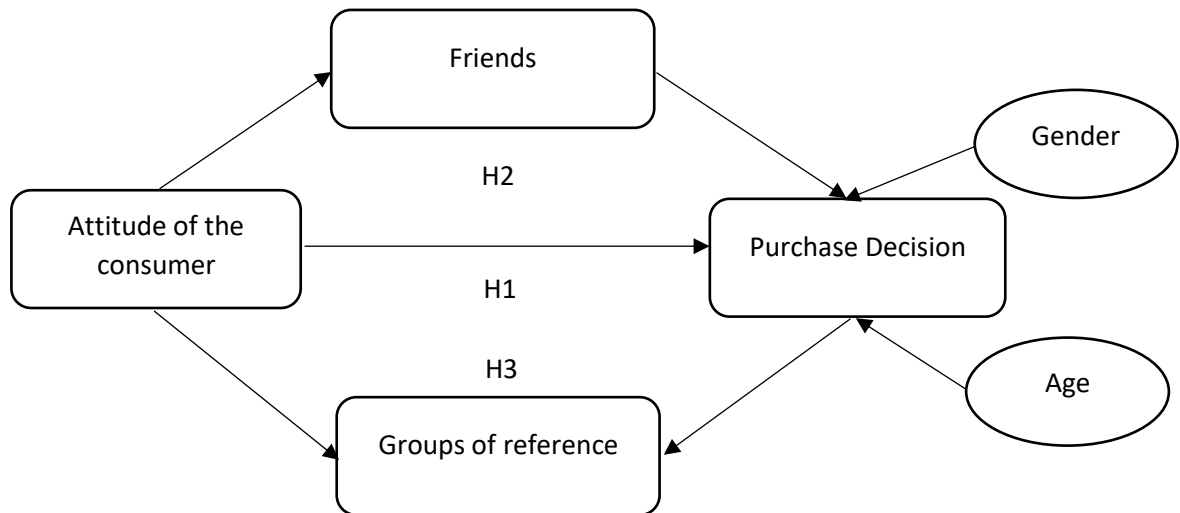
174 Marketing specialists must consider decision-making as a fundamental aspect when  
175 designing strategies for the company. To achieve this, they must define reference groups,  
176 individuals who act according to established norms (Ding et al., 2020). Furthermore, Ding  
177 et al. (2020) conceptualize this as a process where individuals relate to groups by sharing  
178 interests and group values, leading consumers to purchase products they believe align  
179 with their reference group's values. Similarly, identifying with a reference group  
180 necessitates adopting a specific attitude and posture that acknowledges the group's  
181 affiliation, interests, values, and feelings (Abreu, 2019). Studies have also shown that  
182 reference groups influence individual purchasing behavior (Dalziel & De Klerk, 2020;  
183 Delgado, 2006) consumers consider groups with high credibility and experience as a  
184 source of influence (Childers & Rao, 1992; Ding et al., 2020). In this same context,  
185 Hammerl et al. (2016) argue that consumers must maintain consistent relationships by

186 changing their beliefs about a product or brand according to the group's opinion. With  
 187 these arguments, we propose the following hypothesis.

188 H3 Reference groups mediate the relationship between consumer attitude and online  
 189 purchase decisions.

190

191 **Figure 1** *Theoretical Model*



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193 Source: self-made

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## RESEARCH METHODOLOGY

### Population and Sample

197 We selected a sample of 654 respondents using the probabilistic sampling technique  
 198 of simple random sampling, asking people who typically make purchases on digital  
 199 platforms to complete the questionnaire. We applied and sent a 36-item Likert-type  
 200 questionnaire through Google Forms. We collected the information after conducting a  
 201 pilot study with 20 respondents and analyzing the results for reliability. After verifying  
 202 the instrument's relevance, we conducted fieldwork and collected 720 responses, closely  
 203 reviewing 654 of them as valid. This number exceeded the required sample size when  
 204 calculated for an infinite population.

205

### Measures

207 We measured the constructs analyzed using scales validated in previous studies. We  
 208 reviewed several scales on the proposed variables and adapted them to a seven-point  
 209 Likert-type scale, where one represents disagreement and seven represents agreement.

210

211 **Consumer attitude:** Defined as a set of beliefs, knowledge, experiences, and emotions  
 212 that reflect an individual's favorable or unfavorable evaluation of a stimulus that can be

213 a product, idea, or event (Sarabia-Andreu & Sarabia-Sánchez, 2018). This construct was  
214 measured using a 10-item scale adapted from (Brand et al., 2020).

215  
216 **Purchase decision:** Identified as recognizing the need, recognizing the problem,  
217 searching for information, evaluating alternatives, and making the final decision  
218 embodied in the final purchase (Prasad et al., 2019). Based on the theory of Kotler and  
219 Armstrong (2013), Sarabia-Andreu and Sarabia-Sánchez (2018) identified influencing  
220 factors such as social, personal, psychological, and cultural. The scale was adapted from  
221 the research conducted by Rojas et al. (2020) and consisted of 18 questions.

222  
223 **Friends:** The consumer socialization process leads to friends' opinions influencing the  
224 purchase decision. This variable has been measured from four items of the questionnaire  
225 adapted from Al-Nahdi et al. (2015)

226  
227 **Groups of reference:** The consumer socialization process leads to friends' opinions,  
228 influencing the purchase decision. We also measured the variable using four items  
229 adapted from Al-Nahdi et al. (2015).

230  
231 **Control Variables:**  
232 The control variables considered were age and gender, with a sample of 44% men  
233 and 56% women.

### 234 235 **Analysis Techniques**

236 For this research, the modeling of structural equations with partial least squares was  
237 carried out using Smart PLS version 3.3.5 software that facilitates the study of constructs  
238 in the social sciences (Chin & Dibbern, 2010). The applied technique made it possible to  
239 evaluate the relationship between the consumer attitude construct and the online purchase  
240 decision construct in the initial model. Then, we incorporated the friend constructs and  
241 reference groups as mediating variables to measure the indirect effects on the dependent  
242 construct (Hair et al., 2019a). In the first stage, we design the measurement model by  
243 analyzing simultaneous equations in two stages and evaluating the factor loads of the  
244 items that form the proposed constructs. Here, we evaluate the reliability and validity of  
245 the construct indicators. The second stage evaluates the structural model by analyzing the  
246 relationships between the cause and effect variables (Hair et al., 2020). Finally, the  
247 bootstrapping procedure is carried out, creating subsamples with randomly extracted  
248 observations and processing the information to test the statistical significance of the  
249 model coefficients estimated in PLS-SEM (Hair et al., 2019a).

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## RESULTS AND ANALYSIS

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### Descriptive Results

We applied various statistical techniques in the analysis of the research data. In the first phase, a descriptive analysis was carried out with the mean, standard deviation, and correlations between the proposed constructs shown in Table 1; in the second phase, the measurement model was evaluated; and finally, the structural model.

**Table 1** *Descriptive and correlation analysis of the variables.*

	Mean	SD	1	2	3	4
1. Consumer attitude	<b>4.316</b>	<b>1.246</b>	<b>1</b>			
2. Friends	<b>4.266</b>	<b>1.573</b>	<b>0.732**</b>	<b>1</b>		
<b>3. Reference Groups</b>	4.454	1.632	0.680**	0.786**	<b>1</b>	
<b>4. Online purchase decision</b>	4.429	1.367	0.768**	0.716**	0.711**	<b>1</b>

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\*\* The correlation is significant at the  $p < 0.01$  bilateral level.

Source: self-made

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### Evaluation of the Measurement Model

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For the analysis of the measurement model, the reliability and validity of the proposed variables were evaluated, considering Cronbach's alpha as the first indicator with values higher than the proposed threshold of 0.70; concerning the composite reliability, there are also values higher than 0.70 as a level of acceptance (Chin & Dibbern, 2010). Regarding the convergent validity, the values are higher than 0.50, demonstrating that the indicators substantially explain the measurement variable (J. F. Hair et al., 2011). Concerning discriminant validity, the Fornell and Lacker criteria were used, reaching values shown in bold on the diagonal higher than the rest of the values in the column. Likewise, according to the literature, these data can be confirmed by applying the Hetero-trait-monotrait (HTMT) ratio, with results more remarkable than those that can be observed in the upper rows, proving that the proposed constructs have discriminant validity (Henseler et al., 2015). Table 2 displays these data.



277 **Table 2** Analysis of the Constructs' Reliability, Convergent, and Discriminant Validity

	Internal consistency		Conver- validity	Discriminant validity			
	Cronbach' s Alpha	Composite Reliability		Fornell and Larcker and HTMT			
			AVE	1	2	3	4
1. Consumer attitude	0.893	0.913	0,519	<b>0.720</b>	0.798	0.745	0.808
2.Friends	0.909	0.936	0.787	0.726	<b>0.887</b>	0.896	0.785
3.Reference Groups	0.938	0.956	0.844	0.692	0.828	<b>0.919</b>	0.769
4.Online purchase decision	0.959	0.963	0.593	0.753	0.734	0.730	<b>0.770</b>

278 Source: self-made

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280 Table 3 displays the four variables' internal consistency and cross loads, with each  
 281 indicator's external load exceeding its cross loads, as bolded. According to the literature,  
 282 the values are below the limit value of 5 (Hair et al., 2019a), and none of the indicators  
 283 reach critical levels of collinearity.

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285 **Table 3** Discriminant Validity Analysis by Cross-Loading

	Cross Loads			
	Consumer attitude	Influence of friends	Influence of reference groups	Online purchase decision
<b>Consumer attitude</b>				
1 Attitude	<b>0.787</b>	0.598	0.578	0.624
2 Attitude	<b>0.788</b>	0.558	0.532	0.615
3 Attitude	<b>0.787</b>	0.604	0.588	0.620
4 Attitude	<b>0.512</b>	0.362	0.299	0.376
5 Attitude	<b>0.589</b>	0.408	0.369	0.431
6 Attitude	<b>0.452</b>	0.327	0.309	0.375
7 Attitude	<b>0.788</b>	0.554	0.535	0.580
8 Attitude	<b>0.808</b>	0.597	0.569	0.585
9 Attitude	<b>0.778</b>	0.549	0.525	0.558
10 Attitude	<b>0.799</b>	0.571	0.562	0.573
<b>Friends</b>				
11 friends	0.633	<b>0.786</b>	0.671	0.644
12 friends	0.653	<b>0.776</b>	0.730	0.645
13 friends	0.666	<b>0.794</b>	0.751	0.648
14 friends	0.622	<b>0.804</b>	0.784	0.666
<b>Reference groups</b>				
15 GroupsRef	0.629	0.872	<b>0.891</b>	0.655
16 GroupsRef	0.648	0.754	<b>0.919</b>	0.679
17 GroupsRef	0.629	0.753	<b>0.939</b>	0.668

	Cross Loads			
	Consumer attitude	Influence of friends	Influence of reference groups	Online purchase decision
18 GroupsRef	0.638	0.760	<b>0.926</b>	0.681
<b>Online Purchase Decision</b>				
19 Decision	0.597	0.600	0.577	<b>0.716</b>
20 Decision	0.560	0.564	0.532	<b>0.728</b>
21 Decision	0.584	0.607	0.539	<b>0.715</b>
22 Decision	0.617	0.562	0.531	<b>0.754</b>
23 Decision	0.625	0.548	0.517	<b>0.759</b>
24 Decision	0.583	0.613	0.567	<b>0.751</b>
25 Decision	0.599	0.533	0.530	<b>0.776</b>
26 Decision	0.599	0.599	0.582	<b>0.805</b>
27 Decision	0.545	0.516	0.528	<b>0.752</b>
28 Decision	0.549	0.560	0.559	<b>0.786</b>
29 Decision	0.579	0.588	0.585	<b>0.829</b>
30 Decision	0.621	0.550	0.531	<b>0.799</b>
31 Decision	0.558	0.553	0.626	<b>0.795</b>
32 Decision	0.569	0.552	0.627	<b>0.818</b>
33 Decision	0.574	0.548	0.601	<b>0.785</b>
34 Decision	0.530	0.556	0.556	<b>0.751</b>
35 Decision	0.555	0.544	0.568	<b>0.754</b>
36 Decision	0.577	0.560	0.553	<b>0.777</b>

286 Source: self-made

287

288 The data presented in Tables 2 and 3 confirm the validity of the measurement  
 289 model, as the variables and their indicators align with the parameters recommended by  
 290 the literature (Hair, Hult, et al., 2019a). Therefore, the next step involves evaluating the  
 291 structural model.

292

### 293 **Evaluation of the Structural Model**

294 The variance inflation factor (VIF) was used to check for collinearity in the structural  
 295 model. The values were below the limit value of 5 (Hair, et al., 2019b), which means that  
 296 none of the indicators reached critical levels of collinearity.

297

### 298 **Influence of consumer attitude on online purchase decisions**

299 Table 4 presents the data of the evaluation related to the direct relationship of the  
 300 proposed model; initially, the evaluation of the consumer's attitude and the online  
 301 purchase decision was carried out, reaching  $\beta = 0.736^{***}$  with a significance of  $p < 0.001$ ,  
 302 which determines a positive and significant effect with an  $R^2$  of  $0.583^{***}$ , accepting  
 303 hypothesis H1.

304 **Table 4** *Analysis of the Direct Relationship Model*

Relationship	Direct effect	95% confidence interval	R <sup>2</sup>	Significance
Consumer attitude → Online purchase decision	0.736	0.690-0.779	0.583***	0.000***

305 \*\*\* $\leq$ 0.001

306 Source: self-made.

307

308 **Influence of friends in the relationship of the consumer's attitude in the online**  
309 **purchase decision**

310 The mediation analysis explores the strength and significance of the beta and R<sup>2</sup>  
311 coefficients of the purchase decision variable. Hypothesis H2 shows that the influence of  
312 friends mediates the relationship between consumer attitude and online purchase decision,  
313 and hypothesis H3 demonstrates that reference groups mediate the relationship between  
314 consumer attitude and online purchase decision (Baron & Kenny, 1986).

315 The first condition indicates that there must be a significant relationship between  
316 the independent variable consumer attitude and the dependent variable online purchase  
317 decision, see figure 3, a positive and significant effect is observed on the online purchase  
318 decision with a  $\beta=0.736^{***}$  and  $p<0.001$ , so the first condition is accomplished.

319 The second condition indicates that there must be a relationship between the  
320 independent variable consumer attitude and the mediating variable influence of friends  
321 and reference groups; as shown in figure 3, this condition is met, showing a positive and  
322 significant effect of the variable influence of friends  $\beta=0.726^{***}$  and  $p<0.001$  and the  
323 influence of reference groups with  $\beta=0.692^{***}$  and  $p<0.001$ .

324 The third condition indicates that there must be a relationship between the mediating  
325 variable and the dependent variable, as can be seen in graph 2, this condition is fulfilled  
326 since the results of the variables influence of friends  $\beta=0.213^{***}$  and  $p<0.001$ , and the  
327 variable influence of the reference groups have a  $\beta=0.254^{***}$  and  $p<0.001$ , the third  
328 condition is accomplished.

329 The fourth condition indicates that when the independent variable, mediators, and  
330 dependent variable are integrated into the same model, the effect of the independent  
331 variable on the dependent variable must be substantially reduced. As shown in figure 3,  
332 H1 establishes an initial effect of the consumer attitude variable with the online purchase  
333 decision with a  $\beta=0.736^{***}$ , and when the mediating variables influence of friends and  
334 reference groups are incorporated, we have a  $\beta=0.408^{***}$  and  $p<0.001$ . Thus, the fourth  
335 condition proposed by (Baron & Kenny, 1986) confirms and accepts the hypothesis H2  
336 and H3.

337

338 **Table 5** *Analysis of the Mediation Model*

Relation	Direct Effect	95% confidence Interval	R <sup>2</sup>	Significance (p < 0.001)
Consumer attitude → friends	0.726	0.672-0.767		<0.001***
Friends → online purchase decision	0.213	0.114-0.304		<0.001***
Consumer attitude → reference groups	0.692	0.638-0.738		<0.001***
Reference groups → online purchase decision	0.254	0.161-0.351		<0.001***
Consumer attitude → online purchase decision	0.408	0.325-0.497	0.671***	<0.001***
	Indirect effect	95% confidence Interval		Significance (p < 0.001)
Consumer attitude → friends → Online purchase decision	0.154	0.082-0.224		<0.001***
Consumer attitude → reference groups → Online purchase decision	0.176	0.112-0.241		<0.001***

339 \*sig≤0.05; \*\*sig≤0.01; \*\*\*sig≤0.001;

340 Source: self-made.

341

342 The following table summarizes the relationships evaluated in the study, and Figure  
343 3 shows these results graphically.

344

345 **Table 6** *Summary of the research model*

Dependent variable:	Friends	Reference groups	Purchase decision	R <sup>2</sup>
Purchase decision				
Consumer Attitude			0.736***	0.583
<b>Mediation</b>				
Consumer Attitude	0.726***	0.692***	0.408***	0.671
Friends			0.213***	
Reference groups			0.254***	
Change in R <sup>2</sup>				15.09%

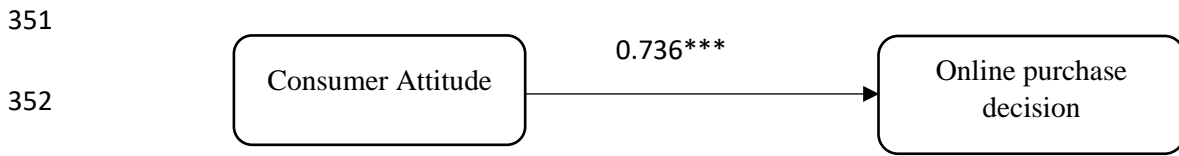
346 \*sig≤0.05; \*\*sig≤0.01; \*\*\*sig≤0.001;

347 Source: self-made.

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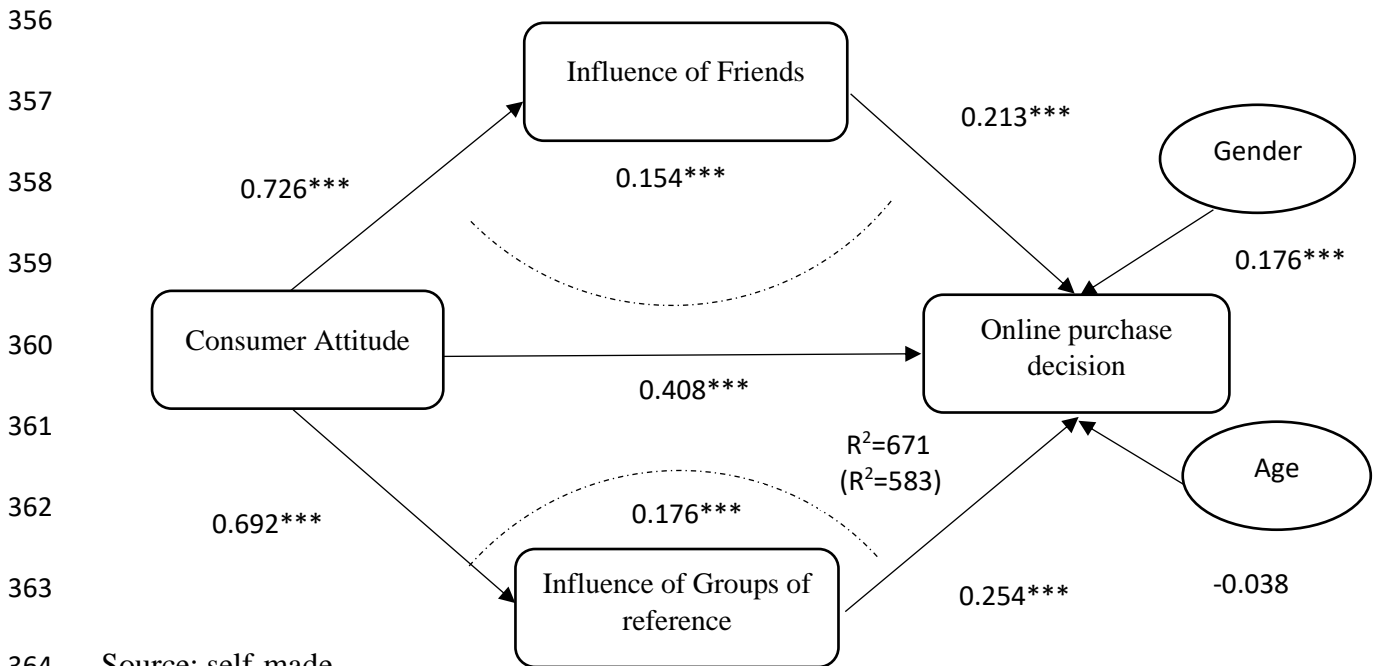
350 **Figure 2** *Direct Relationship Results*



353 Source: self-made.

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355 **Figure 3** *Indirect Relationships Results*



## DISCUSSION AND IMPLICATIONS

367 This study demonstrates the role of the consumer's attitude in the online purchase  
 368 decision and how the influence of friends and reference groups mediates it. The results  
 369 of the initial model measuring the effect of consumer attitude on the online purchase  
 370 decision show that the more positive the client's attitude, the greater their predisposition  
 371 to buy the product, as Shirazi et al. (2022) proposed. Similarly, Errmann et al. (2019)  
 372 found a positive effect between the consumer's attitude and the influence of friends and  
 373 family on the online purchase decision. Errmann et al. (2019) stated that including the  
 374 construct of friends' influence in the structural model detected a significant indirect effect.  
 375 We also included the construct of reference groups, demonstrating a positive relationship  
 376 between the consumer's attitude and the reference groups, which aligns our study with  
 377 previous proposals (Abreu, 2019; Dalziel & De Klerk, 2020).The integral structural  
 378 model showed a significant indirect effect of the consumer's attitude on the online  
 379 purchase decision. Additionally, the significance of the initial relationship decreases

380 under the influence of friends and reference groups, confirming the mediating effect  
381 between the consumer's attitude and the online purchase decision, thus fulfilling the  
382 objective set.

383 The findings reveal that friends and reference groups sharing information through  
384 comments and recommendations in virtual media can facilitate online purchase decisions  
385 (Lăzăroiu et al., 2020; Zirena-Bejarano et al., 2022). The literature reveals that consumers  
386 regard the opinions of solid ties as more credible than those of weaker ties. Therefore, we  
387 presume that friends' comments significantly influence the final decision (Koo, 2016).  
388 Additionally, reference groups facilitate the online purchase decision by providing  
389 consumers with credible sources of accurate information. When uncertainty arises,  
390 individuals recognize these groups as a reference and use their information to make the  
391 final decision (Dalziel & De Klerk, 2020).

392 Specifically, our findings lead us to understand consumer behavior better when they  
393 consider the information shared by their friends and reference groups regarding their  
394 previous purchase experiences with products that interest them. This improves the  
395 evaluation process and leads to more successful decision-making in the online  
396 environment. The organization's marketing managers should consider these findings.

397

## 398 **Conclusions**

399 The study contributes to a better theoretical understanding of the proposed variables:  
400 consumer attitude (Ajzen & Fishbein, 1977), the influence of friends and reference groups  
401 in online purchase decisions (Ajzen, 1991; Akroush & Al-Debei, 2015; Gao et al., 2012).  
402 The study establishes a connection between these variables by incorporating an initial  
403 model linking the consumer's attitude to the online purchase decision and a second model  
404 incorporating the mediating variables of friends and reference groups. The study  
405 demonstrates that companies and consumers who consider the information shared by both  
406 groups will find the online decision-making process facilitated. To our knowledge,  
407 previous studies have not jointly studied the proposed variables as we propose in this  
408 work, which makes our proposal unique.

409 The results show the importance of individual participation in communication with  
410 friends and reference groups, especially when there are cognitive limitations regarding a  
411 particular situation. Consumers can share information with their friends, who can then  
412 socialize and disseminate it (Ding et al., 2020). An individual may have much information  
413 about a particular product that identifies a specific type of attitude of interest to their  
414 friends or reference groups, generating a probability of change or influence on them  
415 (Kozitsin, 2023). Following that line of reasoning, friends and reference groups offer  
416 credibility and trust in sharing their shopping experiences, and this information is easily  
417 accessible through virtual channels, such as social networks, applications, and others. In

418 addition, reference groups offer information on lifestyles, consumed products, qualities,  
419 and characteristics that consumers consult in uncertain circumstances and when they need  
420 credible information (Sugito et al., 2019). The information obtained by the reference  
421 groups increases customer knowledge, generating confidence and ease in the online  
422 purchase decision-making process (Hoonsopon & Puriwat, 2016; Yin et al., 2019).

423 The research also makes a practical contribution to marketing managers of  
424 organizations. Companies should pay close attention to the influence of friends and  
425 reference groups and include them in their strategies when targeting products for younger  
426 generations. This confirms the results proposed by Dalziel and De Klerk (2020). To make  
427 this viable, we should create virtual spaces where communities of friends and reference  
428 groups can meet share information, comments, and purchase experiences on various  
429 products and services. These spaces can display various information that builds  
430 knowledge in consumers, especially those of younger generations who spend many hours  
431 connected to virtual environments.

432 However, the study has certain limitations. The research is cross-sectional, and  
433 given the speed of change in technology and the virtual world, it is challenging to carry  
434 out longitudinal studies, leading to varied results over time. Another identified limitation  
435 is that the study occurred in an emerging country with specific connectivity difficulties,  
436 in contrast to more developed countries where this issue does not exist. Nonetheless,  
437 analyzing the results to understand how the variables behave under the exposed  
438 characteristics is interesting.

439 Future research lines should analyze the behavior of different generations, as  
440 generational characteristics may influence consumer reactions to online shopping  
441 moments.

442

#### 443 **Conflict of interests**

444 None

445

#### 446 **Expressions of Gratitude**

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449

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709 **APPENDIX**

	<b>ATTITUDE</b>
1Actitud	Shopping online is so much fun for me.
2Actitud	I associate online shopping as a recreational activity.
3Actitud	I like to try new and different applications, services or online shopping technologies.
4Actitud	Shopping online can be stressful.
5Actitud	Shopping online becomes frustrating for me
6Actitud	I feel that shopping online is unreliable and can lead to scams.
7Actitud	Online shopping is tedious and complicated
8Actitud	Online purchases consume a lot of my time

9Actitud	When I shop online, I feel like I'm running a high risk.
10Actitud	Shopping online is informative
	<b>INFLUENCE OF FRIENDS</b>
11Friends	My friends think that I should shop online as much as they do.
12Friends	My friends wish I could shop online more often.
13Friends	My friends support my online shopping.
14Friends	My friends agree that buying online is a quick and efficient decision
	<b>INFLUENCE OF GROUPS OF REFERENCE</b>
15 GroupsRef	The referral groups I follow shop online all the time.
16 GroupsRef	The referral groups I follow wish I could shop online.
17 GroupsRef	The reference groups I follow suggest that I shop online.
18 GroupsRef	The reference groups that I follow motivate me to continue shopping online.
	<b>PURCHASE DECISION</b>
19 Decision	I usually buy new products on the recommendation of other people.
20 Decision	A national product or service recommendation has more impact than an international one.
21 Decision	I change my way of acting due to the influence of my social environment.
22 Decision	My opposition to a reference group generates rejection towards related brands.
23 Decision	When I buy a product from a certain brand, it gives me a higher status.
24 Decision	The products I consume reflect my status in society.
25 Decision	I trust people my age more when looking for a product recommendation.
26 Decision	Over the years I am more selective when buying.
27 Decision	The publicity that I am looking for must be directed to a certain social group.
28 Decision	I take into account current fashion and trends when buying a product.
29 Decision	I seek product recommendations before I buy based only on my personal judgment.
30 Decision	I take into account the values of the person who recommends a product to me.
31 Decision	I look for brands that motivate me to be better

32 Decision	I seek to satisfy my needs with brands that give me prestige
33 Decision	I choose brands that transmit their own identity and not copies
34 Decision	I interact with brands that they can learn something from.
35 Decision	After a purchase from a microentrepreneur brand I feel good
36 Decision	I prefer to buy from a brand of micro-entrepreneurs because of the message they convey

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