VISUAL REVIEW | Vol. 16, No. 1, 2024 | ISSN 2695-9631
International Visual Culture Review / Revista Internacional de Cultura Visual
https://doi.org/10.62161/revvisual.v17.5166

WHATSAPP PANIC ATTITUDES AND PRACTICES IN THE FACE OF THE APPLICATION'S DOWNTIME

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KEYWORDS

WhatsApp
Software Cultural Studies
Digital Generation
Noo-politics
Social Networking

ABSTRACT

This study investigates the attitudes and practices of WhatsApp users in response to Facebook's global service outage in October 2020. It is framed within cultural software studies and examines how users experience and relate to social networking platforms. The research also explores the generational dimension in the use of technology and its impact on social relationships.

Received: 01/ 20 /2024
Accepted: 02/ 07 / 2024

1. Introduction

This research aims to characterize, in a preliminary way, the attitudes and practices of users of the WhatsApp application in the face of the global service outage at the beginning of October 2020. (Zuckerberg, 2021)as a phenomenon that can be framed within software cultural studies. On that occasion, the services suspended were those of the applications Facebook, Instagram, WhatsApp and Facebook Messenger (Janardhan, 2021)and although the event lasted only a few hours (BBC News, 2021)its impact was highly significant (Bangkok Post, 2021).

Bypassing net neutrality considerations (Wu, 2003) or those of monopolistic concentration (Wu, 2018), Facebook corporate services are often used as business management tools, relationships or as bridges to access other types of network services.

As a correlate of these complications are also the stressful situations that users may have experienced due to the sudden alteration of their daily routines. The research aimed to approach these phenomena in particular through indirect observation involving users, especially in Guayaquil - Ecuador.

Illustration 1 Recovery post for Facebook, Instagram, WhatsApp and Messenger services.

Source: Authors, 2023

2. Theoretical aspects

The present research is framed in what has come to be called cultural studies of software use and semiotics of interfaces. (Gehl, 2014) which, as some authors argue (Manovich, 2001) are the product of the convergence between two historically separate processes: computer and media technologies. The observation of these cultural phenomena begins in the common place where a program is executed: on a computer in front of us. (Gehl, 2014). In the case of social media software, it starts with a user and his or her experience of creating a personal account (signing up), logging in and using it (logging in), critically considering the pedagogy and structure of the interface (Gehl, 2014, pp. 8-10) and the critical consideration of the pedagogy and structure of the interface (Gehl 2014, pp. 8-10). to the understanding of how the software is made. The generational dimension referring to the digital is also critically addressed. As Benett argues (2008, pp. 775-786) the entry of digital natives into education, employment and other areas, produced a series of studies and analyses on their implications for spaces of inclusion. An important aspect of the social relationships sustained by digital natives, explored by Svensson (2013) refers to online habits. The authors argue that the tendency to download, share or exchange information is one of the most distinctive features of the set of values on the network. As will be seen below, these attitudes may become increasingly relative or socialized.

Following Gehl (2014, pp. 21-23), the question posed here is the following: "Which ideal users are constructed through software design and which specific users resist (or deny) such construction?"

This perspective is understood in the distinction of bio, contained in the category of biopower, from bio contained in memory (noo-power). As Lazzarato (2006) the noo-politics (control techniques) is exercised over the mind, involving the principle of attention to control memory and its possibilities.

The broad critique of Foucault's notion of biopower argues that, unlike in disciplinary societies, in societies of control capitalist valuation is subordinated to the condition of effecting worlds (Lazzarato, 2006, p.101).

In concrete terms, noo-politics requires monopolies that suffer from what Brandeis called "the curse of bigness." As Wu argues (2018), this is what Facebook would have done by buying its competitors (Instagram and WhatsApp) in probably illegal mergers, increasing its presence and advertising load significantly, incurring notorious violations of privacy laws, failing to secure its users against external manipulation, and executing suspicious activities against competitors (Snapchat). It does not seem excessive to frame the notion of noo-politics, finally, in the conception that Marx rehearsed in the Grundrisse in the manner of a regular syllogism: production, distribution, exchange and consumption as the production of the social of an epoch (1973, p. 23). In the Grundrisse, Marx examines how these four elements are interconnected and how, together, they determine the nature and dynamics of a particular historical epoch. Production: Marx argues that the production of goods and services is the core of economic activity. The way production is organized and carried out in a society reflects its economic and social structure. In addition, technology and the division of labor in production influence the relationship between social classes. Distribution: Analyzes how the products and resources produced in a society are distributed. This includes questions of ownership, access to resources and distribution of wealth. Class structure and power relations play a crucial role in this process. Exchange: This refers to how economic transactions, such as trade and the market, are carried out. Marx discusses how exchange relations can be unequal and how prices and exchange values are influenced by production and distribution. Consumption: Consumption relates to how people and social classes use the goods and services produced. Marx considers that consumption is influenced by production and distribution, and that it can also be a source of social inequality. The idea of framing noo-politics in this Marxist conception suggests that noo-politics, which refers to the management of mind and attention in the digital age, is also intrinsically linked to the production, distribution, exchange and consumption of information and knowledge in contemporary society. Just as Marx analyzed how these processes shaped industrial societies, noo-politics relates to how the management of information and knowledge affects our understanding and participation in today's digital society. The definition of criteria for determining the variables to be included became the first aspect to be resolved by the study. This aspect was addressed through the observation of comments made by users of the social network Twitter; that is, the review of conversations on the social network produced clues for the selection of observational criteria of adequate justification.

Illustration 2: User comments on Twitter posts (04/10/2021)

Source: Authors, 2023

Illustration 3: User comments on Twitter publications (04/10/2021)

Source: Authors, 2023

It is always to some extent artificial to generate descriptive criteria to answer the question of who to involve in the research. However, it becomes indispensable to determine a typical profile, always theoretical, of subjects as an operational element that subsequently contributes to data collection. Thus, the following profiles have been estimated:

Profile 1: Adult women, users of the WhatsApp social network, aged 18 to 64 years, residents of the urban area of Guayaquil - Ecuador;

Profile 2: Adult men, users of the WhatsApp social network, age 18 to 64 years, residents in the urban area of Guayaquil - Ecuador;

As it is usually considered, the scope to each of the persons that "fall" within the profile is not homogeneous; nevertheless, the observation was carried out between October 05 and 09, 2021.

The variables included in the study, in the form of indirect observation indicator (Sierra Bravo, 2004) implemented by means of an online survey, were the following:

Table 1.: Variables included in the study

Category	Intermediate Variable	Empirical Variable	Indicator	Technique - mechanism
Subject profile	Identification	Age	Years completed	Survey
		Sex	Male - female	Survey
Use of social media	Active accounts	Facebook	Has an active account	Survey
		WhatsApp	Has an active account	Survey
		Twitter	Has an active account	Survey
		Telegram	Has an active account	Survey
		Tik Tok	Has an active account	Survey
		YouTube	Has an active account	Survey
		Instagram	Has an active account	Survey
		Google Chat	Has an active account	Survey
		Google Meetings	Has an active account	Survey
		Zoom	Has an active account	Survey
		Skype	Has an active account	Survey
		Pinterest	Has an active account	Survey
		Snapchat	Has an active account	Survey
		Messenger	Has an active account	Survey
		WeChat	Has an active account	Survey
		LinkedIn	Has an active account	Survey

User perception	WhatsApp service downtime	Moment or time of perception	Between 10:45 am - More than 12:00 am	Survey
Information - knowledge	Awareness of the WhatsApp service outage	Moment or time of knowledge	Between 11:00 am - More than 1:00 pm	Survey
Attitudes	User's decision	Type of decision	Waited a few minutes for the messages to be sent	Survey
			Restarted your smartphone device at least once	Survey
			Connected to another network hoping to improve its Internet access	Survey
			Rebooted your home network router	Survey
			Uninstalled and reinstalled Whatsapp	Survey
			Called your service provider (Claro, Cnt, Telefonica, etc.)	Survey
			Attempted to connect via another device	Survey
			I take another measure	Survey
			No action taken	Survey
	Expected resolution	Verification intervals	Every 15 minutes or less	Survey
			Every half hour	Survey
			Hourly	Survey
			Another option	Survey
			Did not review	Survey
Tensions	Perceived impact	Type of involvement	Customer contact	Survey
			Collection of services	Survey
			Contact with working group	Survey
			Patient or customer service appointments	Survey
			Contact with your superior or boss	Survey
			Contact with friends	Survey
			Contact with local family members	Survey
			Contact with relatives in another location	Survey
			Contact with partner	Survey
			Other situations	Survey
	Stress	Types of stress	Laboral	Survey
			Group	Survey
			Individual, personal	Survey
			Other type of stress	Survey
Practices	Services used	Type of services	Made conventional calls	Survey
			Send emails	Survey
			Installed other applications	Survey

		Used other social networks	Survey
		Recharged balance	Survey
		Send SMS	Survey
		Took other measures	Survey
		No action taken	Survey
Use of Apps	Types of Apps used or installed	Twitter	Survey
		Telegram	Survey
		Google Chat-Meetings	Survey
		Zoom	Survey
		Skype	Survey
		WeChat	Survey
		Installed other Apps	Survey
		Did not install Apps	Survey

Source: Authors, 2023

The research practiced a simple random probability sampling that implied the collection of 317 surveys (327 were collected in total) and included the following parameters:

Table 2*:* Sample parameters

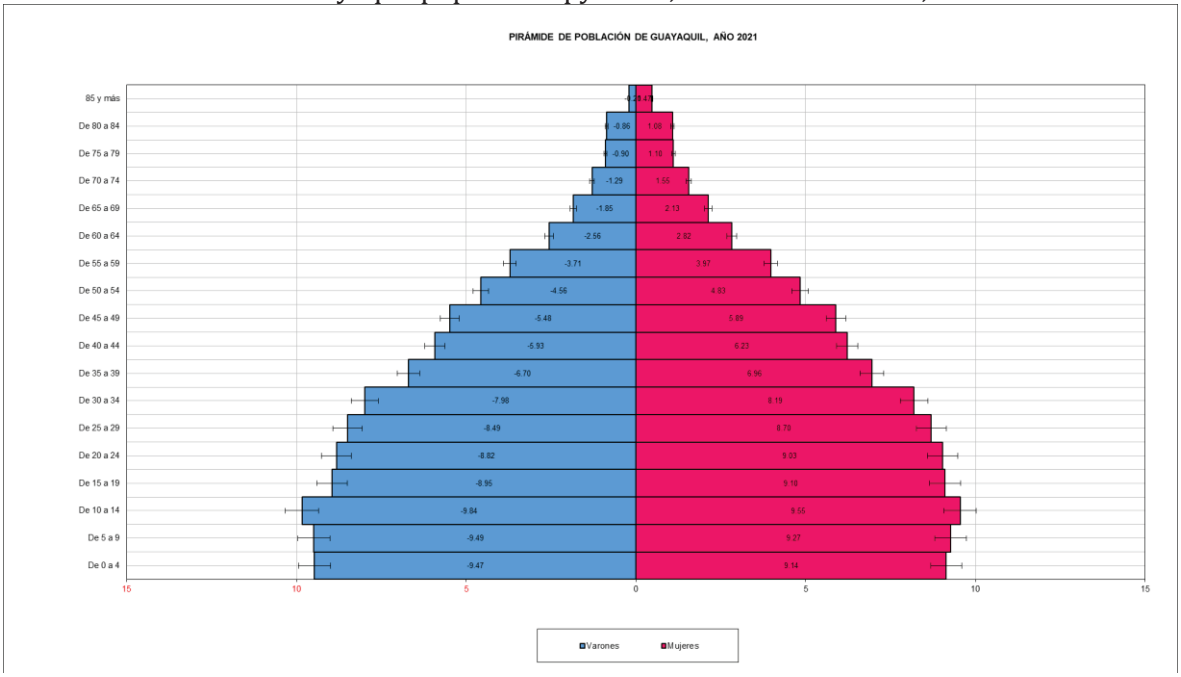
Parameters	Data / Values
Population Size	1,957,267.00
Level of Confidence	95
Error Level	5.5
4. Proportion P	50
5. Proportion Q	50
Sample size	317

Source: Authors, 2023

3. Results and discussion.

The total population of Guayaquil estimated for the year 2021 reaches 2748613 inhabitants (INEC, 2021). (INEC, 2021) (see: graph 1). According to Ecuador's telecommunications authority, by May 2021, fixed and mobile Internet access accounts covered 67.55% of the population (arcotel - sietel, 2021). (ARCOTEL - SIETEL, 2021).

Chart 1: Guayaquil population pyramid, 2021. Source: INEC, 2021.



Source: Authors, 2023

It is considered necessary to consider, together with the variable "population size", the variable "Internet connectivity". According to the industry authority on telephony and connectivity information, in Ecuador, formally, 67.45% (see: table 3) of the population has access to Internet services (ARCOTEL-SIETEL, 2021). It should be noted that, however, some reports place this indicator at a higher level (We are social, 2021).

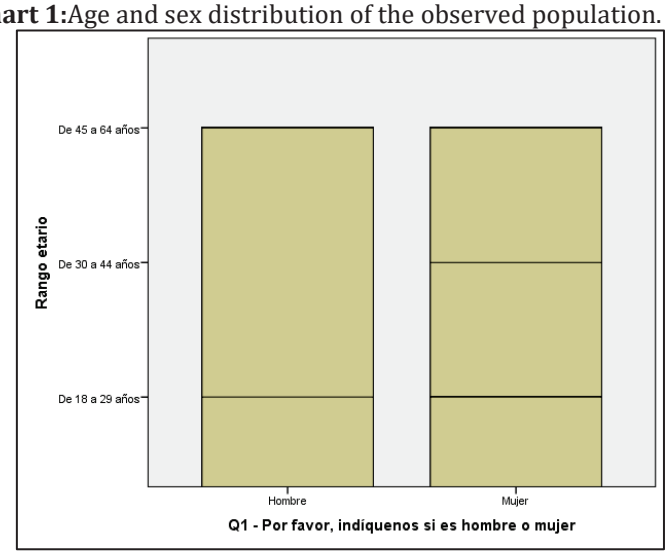
Table 2: Accounts and users of fixed and mobile Internet access service. Source: Arcotel - Sietel, 2021.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Internet Fixed	3.35%	4.47%	5.98%	6.88%	8.25%	9.16%	9.76%	10.61%	11.48%	12.12%	13.54%	13.16%
Internet Mobile	2.35%	10.48%	22.15%	26.66%	30.79%	34.97%	47.04%	52.50%	54.88%	54.06%	54.54%	54.39%

Source: Authors, 2023

The age variable was determined using the economically active population (EAP) criterion; the data collection obtained a distribution of 33.3% for the 18 to 29 years old segment, 26.9% for the 30 to 44 years old group, and 39.8% for the 45 to 64 years old segment (see graph 2).

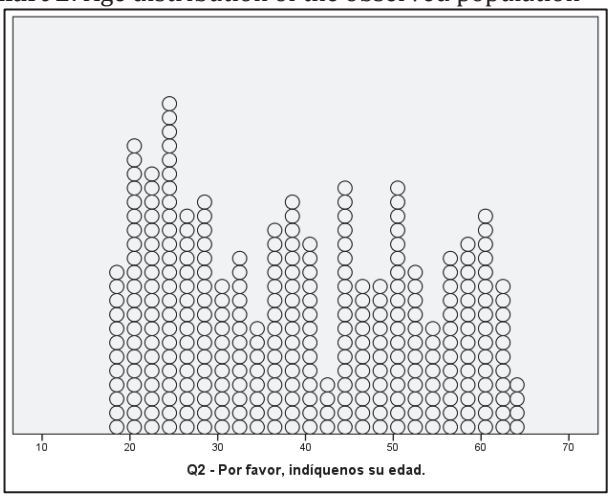
Chart 1: Age and sex distribution of the observed population.



Source: Authors, 2023

Based on the assumption that the use of social networking media is a widespread phenomenon (see Figure 3), as was television in its time, among the perspectives of the present study was the intention to measure the distance between the onset of service failure and access to information about the event.

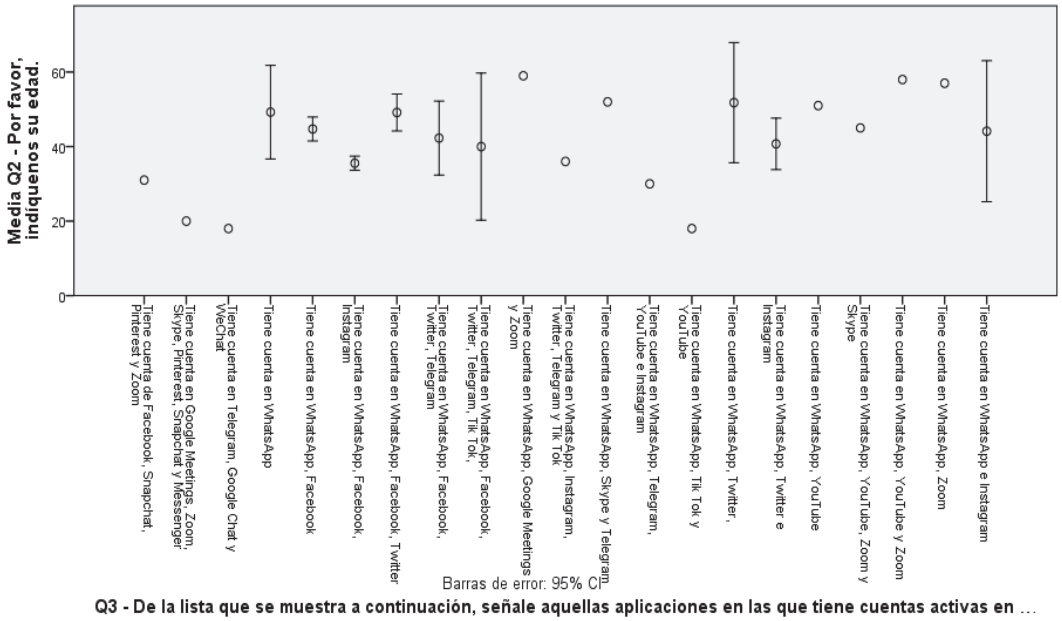
Chart 2: Age distribution of the observed population



Source: Authors, 2023

This relationship of variables is proposed in the perspective of differentiating attitudes in relation to the service; that is, attitudes without information and with information. This implies a difference between decisions based on perception and others based on informed knowledge. This understanding of processes does not neglect their correlation with variables such as age and sex (see: graphs 2 and 3).

Chart 3: Social media use by age: correlations.



Source: Authors, 2023

In terms of users, the typical profile is much more likely to be under the age of 40, with active accounts on the three major Facebook cooperative services (see Figure 4). Although it may be clear that, in this sense, we are not dealing with "digital natives", it is also plausible to admit that a higher frequency of having active accounts is more likely in the younger age segments (Figure 3).

The recorded time of service downtime of the WhatsApp app has been determined around 10:47 a.m. on Monday, October 4, 2021. (El Comercio Newspaper, 2021). 44.34% of the population noticed the failure at the time it occurred, with no significant differences between men and women. 18.65% noticed the failure around 11:00 a.m.; that is, within 15 minutes 63% of the users already perceived the deficient functionality of the application.

If this group is analyzed according to the gender variable, it can be seen that up to around 11:00 am, 65.33% of the female users of the application had already noticed the failure, while in the case of men the proportion is slightly lower: 57.84%.

Although the perception of the failure was very dynamic (see Tables 6 and 7), the circulation of information explaining the failure was not. At around 11:00 a.m., only 21.41% were aware of the problem, a group that by 11:15 a.m. reached 29.66%, with no significant differences between men and women.

The analysis of the distribution of the mean age distribution of the observed population by 15-minute segments, both for the failure initiation event and for the failure information event, shows mean age per segment relatively close to the mean of the overall sample.

The mean age of the group of users who initially noticed the failure was 37.27 years, while the mean age of those who obtained information about the failure 15 minutes later was 36.53 years.

Table 3: Time to notice the failure of WhatsApp services

Q4 - El día lunes 4 de octubre, usted notó problemas en el servicio de WhatsApp alrededor de las:	Media	N	Desviación estándar
10h45	37,27	145	13,802
11h00	43,41	61	13,981
11h15	33,42	12	7,621
11h30	39,80	25	12,945
11h45	35,82	11	13,288
12h00	42,24	17	15,450
Luego de las 12h00	40,41	56	13,813
Total	39,21	327	13,823

Source: Authors, 2023

In both cases, the population is included in the central segment of the economically active population, so it is possible to interpret that the cause of these attitudes is related to labor-related issues.

Table 4: Time to access information about WhatsApp service failure

Q5 - Usted se enteró que la aplicación WhatsApp sufría una falla global de sus servicios alrededor de las:	Media	N	Desviación estándar
11h00	36,53	70	13,620
11h15	37,07	27	12,740
11h30	43,11	35	14,002
11h45	39,09	22	12,943
12h00	40,39	49	14,941
12h15	34,69	13	13,689
12h30	39,64	14	14,393
12h45	35,37	19	14,202
13h00 o más	41,53	78	13,295
Total	39,21	327	13,823

Source: Authors, 2023

Table 5: Asymptotic Correlation Matrix: Asymptotic Correlation Matrix

		Umbral						Ubicación		
		[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 10h45]	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h00]	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h15]	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h30]	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h45]	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 12h00]	Q2Porfavorindíquenossuedad	[Q1Porfavorindíquenossieshombreomujer=Hombre]	[Q1Porfavorindíquenossieshombreomujer=Mujer]
Umbral	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 10h45]	1,000	,958	,950	,931	,920	,900	,906	,012	.[a]
	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h00]	,958	1,000	,989	,965	,953	,930	,903	,016	.[a]
	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h15]	,950	,989	1,000	,975	,962	,937	,901	,017	.[a]
	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h30]	,931	,965	,975	1,000	,985	,958	,891	,018	.[a]
	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 11h45]	,920	,953	,962	,985	1,000	,971	,884	,019	.[a]
	[Q4Eldíalunes4deoctubreustednotóproblemasenelserviciodeWhatsApp = 12h00]	,900	,930	,937	,958	,971	1,000	,868	,020	.[a]
Ubicación	Q2Porfavorindíquenossuedad	,906	,903	,901	,891	,884	,868	1,000	-,223	.[a]
	[Q1Porfavorindíquenossieshombreomujer=Hombre]	,012	,016	,017	,018	,019	,020	-,223	1,000	.[a]
	[Q1Porfavorindíquenossieshombreomujer=Mujer]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]

Función de enlace: Logit.

a. Una o ambas estimaciones de parámetro son redundantes.

Source: Authors, 2023

Table 6: Asymptotic covariance matrix: asymptotic covariance matrix

		Umbral						Ubicación		
		[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 10h45]	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h00]	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h15]	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h30]	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h45]	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 12h00]	Q2Porfavorindíquenossuedad	[Q1Porfavorindíquenossieshombreomujer=Hombre]	[Q1Porfavorindíquenossieshombreomujer=Mujer]
Umbral	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 10h45]	,095	,093	,092	,092	,092	,092	,002	,001	0[a]
	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h00]	,093	,098	,098	,097	,097	,096	,002	,001	0[a]
	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h15]	,092	,098	,099	,098	,098	,098	,002	,001	0[a]
	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h30]	,092	,097	,098	,103	,102	,101	,002	,001	0[a]
	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 11h45]	,092	,097	,098	,102	,105	,104	,002	,001	0[a]
	[Q4Eldíalunes4deoctubreustednotóproblemaseneldeservicioWhatsApp = 12h00]	,092	,096	,098	,101	,104	,109	,002	,001	0[a]
Ubicación	Q2Porfavorindíquenossuedad	,002	,002	,002	,002	,002	,002	,000	,000	0[a]
	[Q1Porfavorindíquenossieshombreomujer=Hombre]	,001	,001	,001	,001	,001	,001	,000	,050	0[a]
	[Q1Porfavorindíquenossieshombreomujer=Mujer]	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]	0[a]

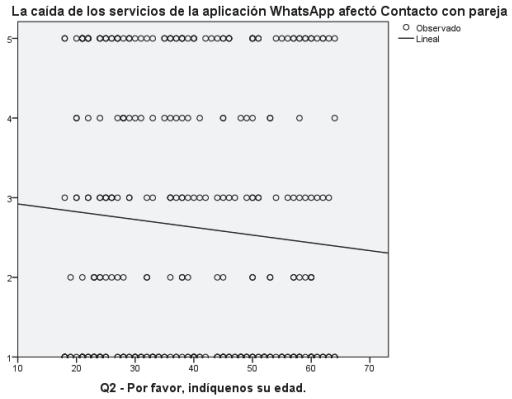
Función de enlace: Logit.

a. Una o ambas estimaciones de parámetro son redundantes.

Source: Authors, 2023

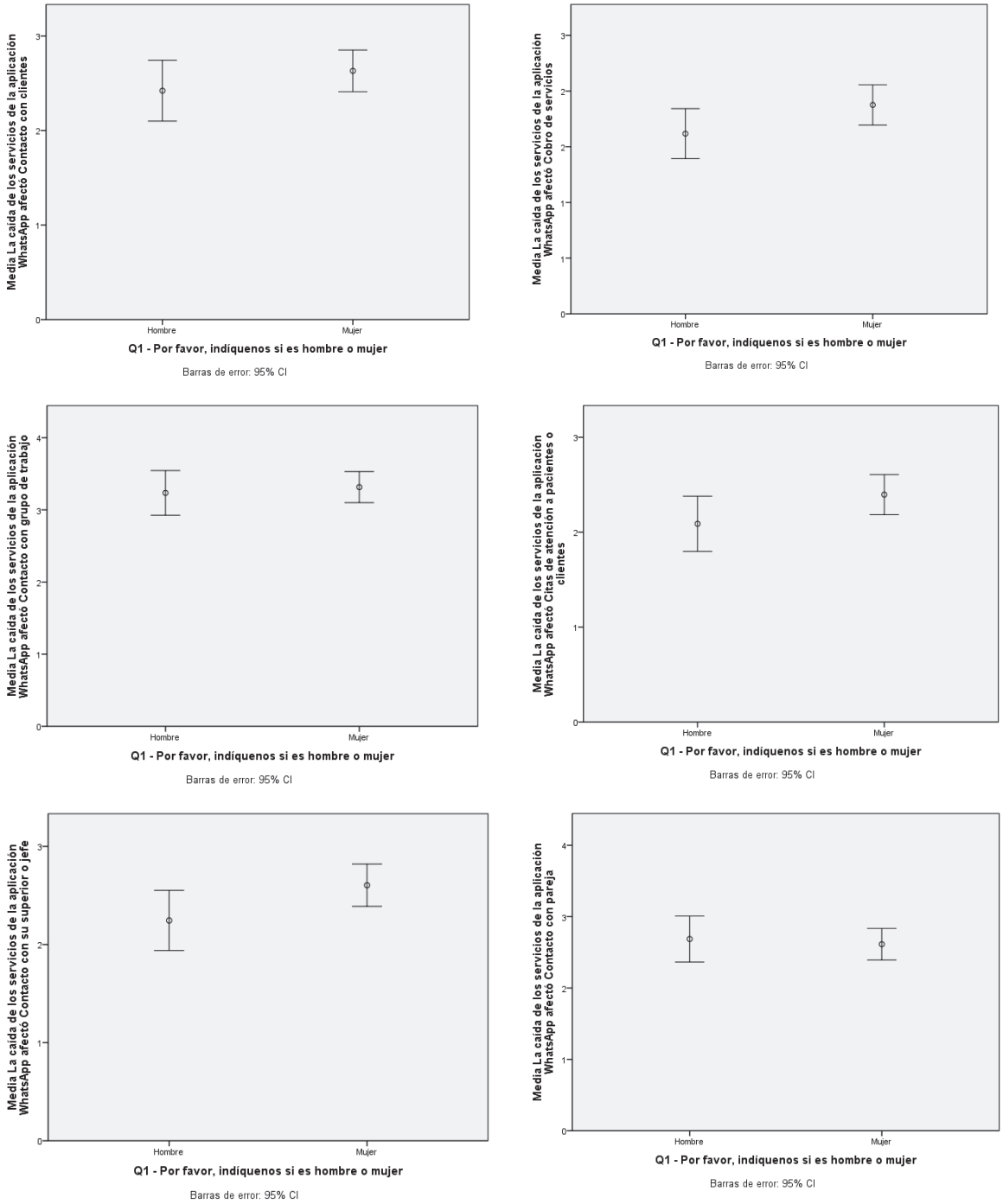
Although the failure of services was generalized, the distribution of the stresses caused by this event can be distinguished, at least in relation to the variables age and gender. It can be observed that for the variables representing types of stress, the probability of affecting women is comparatively higher than that of men. Indeed, in several areas of work activities, such as customer service, payment for services, communication with the work group, customer service and contacts with superiors, women perceive greater stress than men, with the exception of one factor: contacts with a partner (see graphs 6 and 7). In this aspect, the relationship changes and it is observed that the probability of tension in men due to the affectation of contacts with partners is higher than in women. This tension decreases as age increases (see graph: 5).

Chart 4: Linear regression of variables age and stress due to loss of contact with partner.



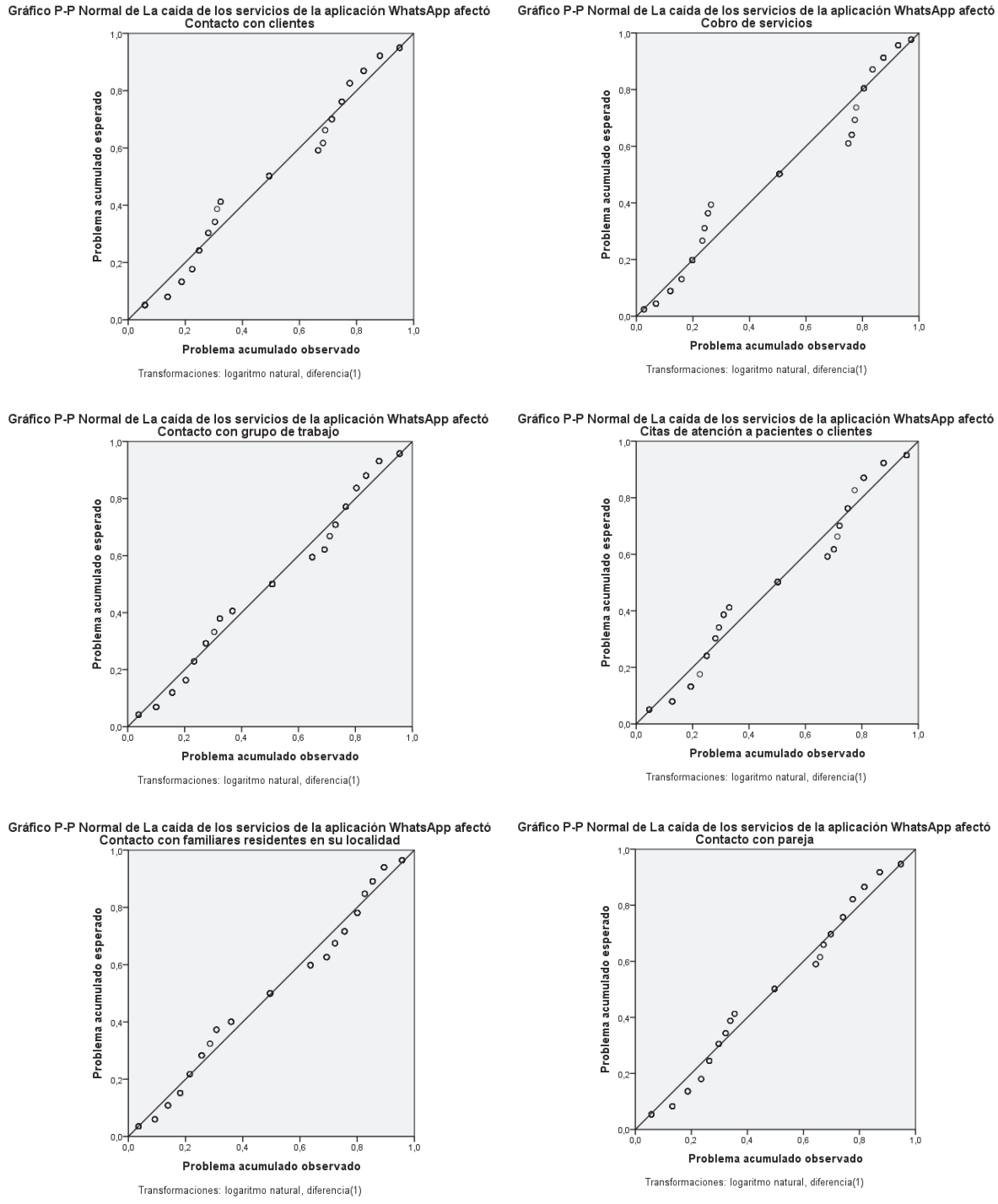
Source: Authors, 2023

Chart 5: Relationships between the variables type of affectation and sex.



Source: Authors, 2023

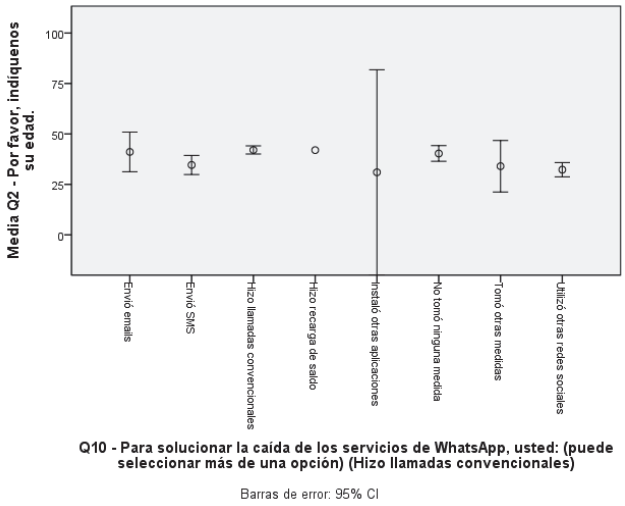
Chart 6: P-P probability plots of stress types



Source: Authors, 2023

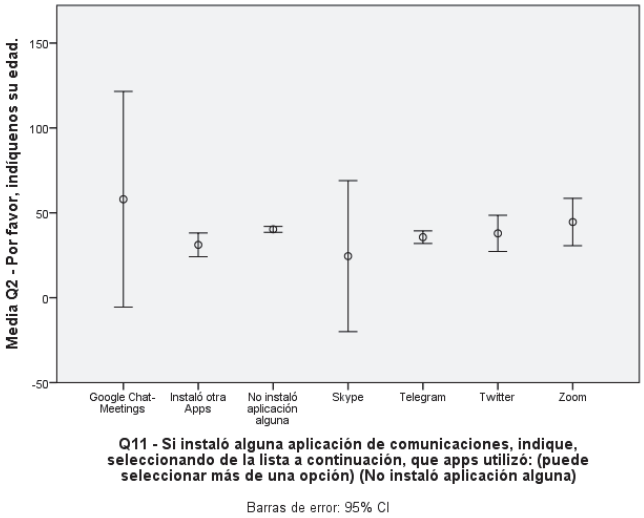
The stress response, observed in a differentiated manner by age and sex, was followed by practices based on informed knowledge of both "old" and contemporary communication technologies. This first adaptation, promptly elaborated, produced in users the return to conventional telephone calls, as well as the use of SMS messaging, uncommon uses when considering WhatsApp as the de facto application for audiovisual communications and data transfer.

Chart 7: Communication practices developed in the face of the WhatsApp application failure.



Source: Authors, 2023

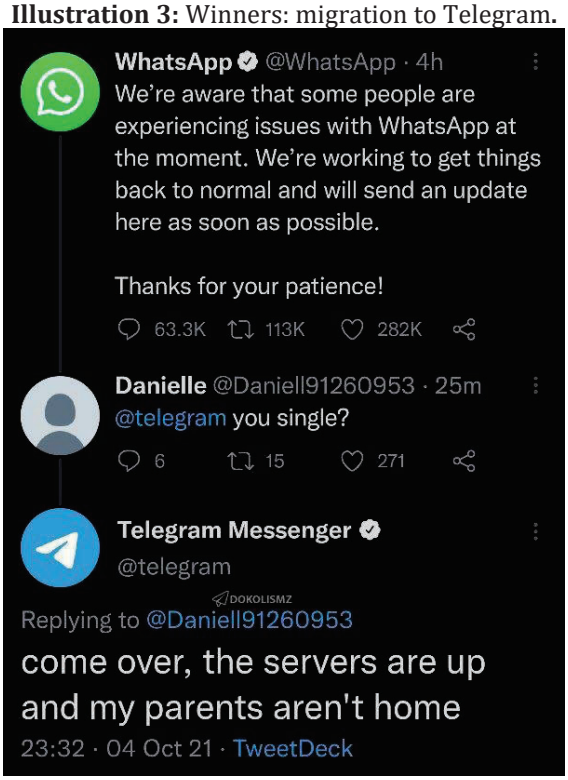
Chart 8: Applications installed to replace WhatsApp.



Source: Authors, 2023

A second type of adaptation observed in response to the temporal incidence was the identification of substitute applications. In this sense, the probability of user growth of the Telegram app is presented as more likely than the use of the Microsoft and Google equivalents.

Illustration 3: Winners: migration to Telegram.



Source: Authors, 2023

4. Conclusions

In the field of cultural studies of software use and interface semiotics. (Gehl, 2014) it is necessary to delve deeper into social adaptations to relational networking software, in a back and forth between interaction and systems theories. Both theoretical dimensions become necessary not only because users of social network media are de facto full-time workers for social networks by generating informational content in exchange for services.

Here the classic Marxist understanding of commodity production, a process in which the producer simultaneously produces both himself and the social, becomes necessary. As we know, these references require both the philosophy of history and philosophical anthropology (Marx, 1973).

Based on the assumption that the use of social networking media is a widespread phenomenon, just as television once was, among the perspectives of the present study was the intention to measure the distance between the onset of service failure and access to information about that event. This implies a difference between decisions based on perception and others based on informed knowledge. This understanding of processes does not neglect their correlation with variables such as age and sex.

In this sense, the typical user profile is much more likely to be under the age of 40, with active accounts on the three major Facebook cooperation services. While it may be clear that, in this sense, we are not dealing with "digital natives", it is also plausible to admit that a higher frequency of having active accounts is more likely in the younger age segments.

The analysis of the distribution of mean age distribution of the observed population by 15-minute segments, both for the failure initiation event and for the failure information event, showed mean age per segment relatively close to the mean of the overall sample.

It can be observed that, although the failure of WhatsApp application services was generalized, trends can be distinguished in the distribution of the stress caused by this event, at least in relation to the variables age and gender. It is observed that for the variables that represent types of stress, the probability of affecting women is comparatively higher than that of men, with the exception of one factor: contact with the partner. This stress decreases as age increases.

The stress response, observed in a differentiated manner by age and sex, was followed by practices based on informed knowledge in relation to both "old" and contemporary communication technologies. A first type of adaptation produced in users the return to conventional telephone calls, as well as the use of SMS messaging. A second type of adaptation observed in response to the temporal incidence was the identification of substitute applications, especially the download and installation of the Telegram app.

- **Impact of Technology Dependency:** Future research could explore in depth the psychological and emotional impact of technology dependency on social network users. How does the sudden interruption of these services affect users' mental and emotional health? What coping strategies do they use?
- **Technological Adaptation:** It would be relevant to investigate to what extent users resort to technological alternatives during service interruptions. How do they choose and adopt substitute applications such as Telegram? What factors influence these decisions?
- **Gender and Digital Tensions:** Gender differences in response to tensions caused by service drops are an intriguing topic. Further research could explore the reasons behind these disparities and their relationship to digital couple communication.
- **Impact on Business Communication and Productivity:** Another potential area of research would be to assess the impact of the service outage on communication and productivity in work and business environments. How does this disruption affect businesses and how do they adapt?

In summary, these preliminary findings point to the importance of continuing to investigate the complex dynamics between users and social networking platforms in today's digital society. Future research may shed light on how technological disruptions affect individuals and communities, as well as on the coping strategies and sociocultural implications of these experiences.

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