



The effect of Emotional Contagion on Electronic Word of Mouth: An Applied study on Mobile Phone Brand Customers of Social Network Sites in Egypt

Research extracted from a PHD.'s Thesis

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Abstract

This study is aimed to investigate the effects of relationship emotional contagion on Electronic Word of Mouth (E-WOM Quality, E-WOM Quantity, Sender's Experience), by focusing on the Mobile Phone Brand Customers of Social Network Sites in Egypt. According to the literature review, an analytical model is developed as guidance to test the relationship between the research variables. The Sample Size is 384, and the valid questionnaires are 312, an estimated 90% Of the total Sample Size. The findings show that there is a significant, positive, and direct effect of Emotional Contagion on E-WOM Quality (Cognitive, Emotional, Behavioral). The study also finds that there are significant differences between customer's opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding emotional contagion, and E-WOM.

Keywords: Emotional Contagion, Electronic Word of Mouth.

Introduction

Emotional contagion theory claims the transfer of emotions from the sender to the receiver with the receiver catching the sender's emotions (Schoner-Schatz et al., 2021). Electronic word of mouth (E-WOM) has changed consumers' information consumption patterns completely in the digital age and is attracting increasing attention from both academics and practitioners. Originating from the concept 'word of mouth (WOM) (Liu et al., 2021). With the enrichment of emotional contagion theory, its implicational domain has expanded from the initial field of mental health to the field of services and marketing, and related research has focused on emotional contagion between service personnel and consumers (Meng et al., 2021).

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The importance of social networking sites has increased in recent times and has become a place for everyone. It has become increasingly used to reach almost all areas and marketers usually use it to market their products and services due to the large numbers that frequent such sites continuously and daily. So, we usually find a transfer of experiences between users and everyone who expresses his opinion about what was exposed to him and what he bought online. These sites are a fertile environment for the transmission of electronic word of mouth because of their vital impact on everyone. Thus, these sites through electronic word of mouth can succeed in something and can also make it lose (Luo & Zhong, 2015). Studies on emotional contagion arising from online social network sites provide evidence of the spreading of happiness and emotion to other people through people's online status (Ahmad and Guzmán., 2021).

Individuals can experience the same feelings as others without being aware of them because emotional cases can be transmitted from one person to another through emotional conditions. These emotional causes can be transmitted through social networking sites easily and without the awareness of users have emotional conditions such as depression or happiness can be transferred from users to others through social interactions and interactions between individuals on social networking sites. So, the use of emotional conditions is essential in dealing with social networking sites users (Kramer et al., 2014

In this study, the researcher focuses on mobile phones because Mobile shopping sites and applications provide customers with a convenient, compatible medium for purchasing from their chosen retailers. Engaged customers are likely to interact with mobile apps frequently beyond the transactional motive of immediate purchase. Higher degrees of engagement among satisfied customers are likely to result in positive outcomes – such as willingness to investigate newly launched products – and such willingness is likely to lead to stronger purchase intentions, impulse purchases, earlier purchases, and greater product/service advocacy. In this study, we investigate the moderating role of engagement in customer satisfaction–loyalty relationship by focusing specifically on mobile apps as a shopping medium. So, the researcher wants to examine the effect of Emotional Contagion on Electronic Word of Mouth.

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Research Purpose

The purpose of this study is to explain how Emotional Contagion Effect Electronic Word of Mouth (Cognitive, Emotional, Behavioral) within the Mobile Phone Brand Customers of Social Network Sites in Egypt.

Literature Review

Emotional Contagion Definition:

The process of emotional contagion describes the transfer of emotions from the sender to the receiver (Schoner-Schatz et al., 2021). Emotional communication refers to the expression, contagion, and sharing of emotions among individuals or groups, which starts from the transmitter's emotions and is based on the evaluation of objective things and behavioral reactions, ultimately leading to the emotional reactions and communication behaviors of both the transmitter and the receiver (Meng et al., 2021). Kramer et al., (2014) defined emotional contagion as transferring the emotional state via text-based computer-mediated communication. Also, Koku & Savag, (2016) defined emotional contagion as the tendency to automatically mimic and synchronize expressions, vocalization, postures, and movements with those of another person and, consequently, to converge emotionally". It is possible to theorize based on this definition that the emotional state of customers during a service encounter is largely influenced by the emotional expressions of the attending employee.

Emotional contagion happens when people imagine themselves in others' situations (Ahmad & Guzmán., 2021). Additionally, Hatfield et al., (2018) defined emotional contagion as the tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally. Moreover, Baral & Sampath, (2019) defined emotional contagion as the tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally. Moreover, it is an all-pervasive phenomenon that has implications for both social and organizational settings.

Banerjee & Srivastava, (2019) defined emotional contagion as the process of transferring one individual's behaviors and emotions to another individual. Furthermore, Kucukergin & Dedeoglu, (2020) referred to emotional contagion as the spillover of emotions from one individual to another. Also, the same study added another definition which is the tendency to mimic the verbal, physiological, and/or behavioral aspects of another

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person's emotional experience/expression, and thus to experience/express the same emotions oneself.

Guadagno et al., (2013) referred to online emotional contagion as the rapidity with which people can spread information online enhances contagion, For example, survey data indicate that one in seven adult users report that they have uploaded a video to the, and 59% of people report that they "very frequently" or "frequently" forward Internet material to colleagues, peers, family or friends, online emotional contagion can happen when people watch Internet video clips, they may experience the same emotions as the people in the clip, and by forwarding that clip, they anticipate that the receiver will experience similar emotions. When one is embedded within an existing network of like-minded individuals, this contagion can spur appropriate behavioral responses by a mass of people.

Electronic Word of Mouth Definition:

E-WOM refers to any Internet-mediated informal communication about products, services, or brands, regardless of the information valence (Liu et al., 2021). Kim et al., (2014) defined e-WOM as consumers' interpersonal communication about products and services via online communities, and it is commonplace that WOM plays a major role in influencing consumer attitudes and behaviors.

Electronic word of mouth (E-WOM) plays a key role in shaping consumer attitudes and behaviors. More consumers digitally share information, research what others say about products and services, and rely on E-WOM to gain knowledge (Todri et al., 2021). Lim, (2015) defined E-WOM as Any positive or negative statement made by existing and potential customers about a product, service, or company, which is made available to a multitude of people on the Internet; for example, this can include online communication in social networking sites, micro-blogging sites, forums, and consumer review sites. Scholars have also examined how certain features of disseminators (senders) and recipients shape the effect of E-WOM (Todri et al., 2021).

Based on several insights from E-WOM research, there is the act of information sharing with peers, families, and strangers (Ali, 2021). Further, Chen et al., (2015) referred to E-WOM as all informal communications directed at consumers through Internet-based technology related to the usage or characteristics of goods or services, or their sellers. Moreover, Fu et al., (2015) referred to E-WOM as online opinion leadership which stressed the process by which people (opinion leaders) influence the attitudes or behaviors

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of friends. It implies that e-WOM communication is an act by which individuals exert power- full influences upon others.

Additionally, Hussain et al., (2018) defined E-WOM as an advertisement tool to share viewpoints with each other because of customers' awareness regarding products. Also, E-WOM can be defined as informal consumer communications directed at other consumers about the ownership, usage, or characteristics of specific goods and services and/ or their sellers, in addition, it is a contemporary version of WOM in the digital era, encompassing online reviews, recommendations, and opinions, and it has gained great importance in the marketing literature (Thakur, 2019).

E-WOM Dimensions:

Several previous studies mentioned that E-WOM has two or more two dimensions. Cheung et al., (2008) stated that E-WOM has seven dimensions which are, relevance, timeliness, accuracy, comprehensiveness, source experience, source credibility, and information usefulness. Furthermore, Andreassen & Streukens, (2009) mentioned four dimensions for E-WOM which are, commercial practice issues, experience issues usage, requests for information, and launching new developments of products. In addition, Abrantes et al., (2013) stated that E-WOM has two dimensions which are, E-WOM within the group and E-WOM outside the group. Also, Wang et al., (2013) mentioned that E-WOM has three dimensions namely, efficiency, charity, and integrity.

Additionally, Chu & Sung, (2015) stated that E-WOM has two dimensions namely, tweets and re-share Tweets. Fu et al., (2015) presented two dimensions for E-WOM namely, positive E-WOM and negative E-WOM. Moreover, Zhao et al., (2016) showed that E-WOM has three main dimensions namely, opinion seeking, opinion giving, and opinion passing.

While (Lin et al., 2013; Kasabov, 2016) stated that E-WOM has three main dimensions more general than the dimensions mentioned in the previous studies which can be presented as follows:

1-E-WOM Quality: Indicating the extent of the Word-of-mouth capability & component comments or observations to convince the customer, where the decision of the consumer to buy depends on certain criteria or conditions that meet their needs & determine their wishes on the basis of the quality of information they received, & therefore, it is important for consumers to determine imagine the quality of information as to evaluate decisions potential purchase.

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2- E-WOM Quantity: Refers to the number of comments that are posted about your favorite products / Popularity on the Internet because it is considered to represent the performance of the products on the market, Consumers also need a signal to boost their confidence to reduce the error to take a feeling or risk while shopping, & represents the quantity Comments best most products popular on the Internet, in other words, consumers may believe that more reviews represent the highest popularity of the products & the importance.

3-Sender's Expertise: Comments by consumers experienced lead to attract new consumers to adopt the information to make a buying decision. After reviewing several previous studies which presented different dimensions for E-WOM, the researchers decided to adopt the dimensions mentioned in (Lin et al., 2013; Kasabov, 2016) in the current study due to their reality and suitability with the current study applied environment.

Hypotheses Development:

In this section, the researcher introduces the literature with describe the hypothesized relationships among the research variables as following:

1. The Relationship between Emotional Contagion and E-WOM:

Hyvärinen & Beck, (2018) indicated that in the social media era, the probability of emotional contagion between users is very high, because of the easy information which can be collected via social media sites. So, customers are influenced easily by each other, Therefore emotional contagion between customers will affect their E-WOM.

Septianto & Chiew, (2018) examined the correlation between emotional contagion and e-WOM on social networking sites. The results found that positive emotional contagion affects e-WOM significantly and positively.

So, the researchers can formulate the following hypothesis:

H1: There is a significant effect of Emotional Contagion on E-WOM.

H2: There is a significant effect of Emotional Contagion on E-WOM dimensions; this hypothesis is divided into the following sub-hypothesis:

H1a: Emotional Contagion has a significant effect on E-WOM quality.

H1b: Emotional Contagion has a significant effect on E-WOM quantity.

H1c: Emotional Contagion has a significant effect on E-WOM expertise.

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H3: There are significant differences between customers opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding to emotional contagion, and E-WOM.

So that, the researcher can show the Relationships between Variables through research model as shown in the following Figure (1):

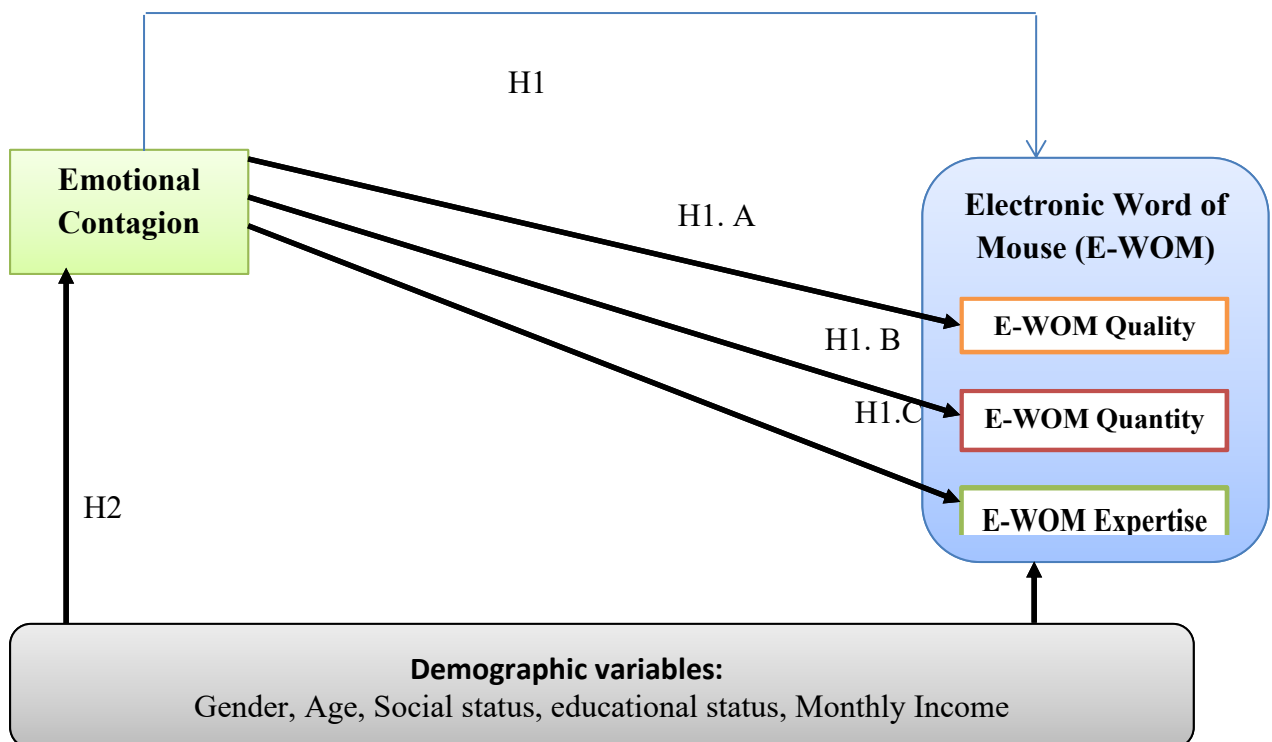


Figure (1) Conceptual framework for the Relationship between Research Variables.

Source: Prepared by the Researchers based on Literature Review

Research Gap:

Based on the literature review, the researcher noticed the following points: There are few previous studies that explored the relationship between emotional contagion and E-WOM. The current study seeks to explore this relationship.

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Research Questions:

1. What is the direct effect of Emotional Contagion on Electronic word of mouth communication?
2. What is the direct effect of Emotional Contagion on Electronic word of mouth communication dimensions?
3. Are there significant differences between customer's opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding emotional contagion, and electronic word of mouth communication dimensions?

Research Objectives:

In order to answer the previous questions, the current research will adopt the following objectives:

1. Determining the direct effect of emotional contagion on electronic word of mouth communication.
2. Determining the direct effect of emotional contagion on electronic word of mouth communication dimensions.
3. Determining the nature of the differences between customers opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding to, emotional contagion, and E-WOM.

Research Hypothesis:

H1: There is a significant effect of Emotional Contagion on E-WOM.

H2: There is a significant effect of Emotional Contagion on E-WOM dimensions; this hypothesis is divided into the following sub-hypothesis:

H1a: Emotional Contagion has a significant effect on E-WOM quality.

H1b: Emotional Contagion has a significant effect on E-WOM quantity.

H1c: Emotional Contagion has a significant effect on E-WOM expertise.

H3: There are significant differences between customers opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding to emotional contagion, and E-WOM.

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Research Methodology

Research Approach

The appropriate approach implemented in this study is the deductive research approach since the study examines theoretical concepts with empirical data. In this study a quantitative research approach is implemented since the purpose of this study is to gain knowledge about an entire population. Further, this study strives not to gain deeper knowledge about the studied variables but to assess the relationship between the variables to support or reject the hypotheses in this study.

Research Design

The current study adopted the survey strategy for its compatibility with the deductive approach, as well as with quantitative research that was used in data collection.

Data Sources

There are two different types of sources of information that are commonly used in research. These types of data sources include secondary and primary data. In this study, secondary data is collected from the previous literature review in the field of study and information published about the industry of mobile telecommunications. Primary data sources will be used from customers of mobile telecommunications companies to answer the specific research questions at hand.

Data Collection Method

The current research used the self-administered questionnaire that is delivered electronically via google form and collected later to make it available to a large number of mobile phone customers.

Data Collection Instrument

Questionnaire Design& Measuring Research Variables

The current research aims to examine the direct effect of emotional contagion on electronic word of mouth. Finally, exploring the significant difference in the effect of Customer Engagement on E-WOM of different demographic variables (gender, age, social status, educational status, monthly income).

The terms of measurement for each variable were agreed upon by reviewing the previous literature. Some phrases have to be reformulated to fit the Egyptian language and environment to make the questionnaire more

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understandable. To measure the research variables, Likert scale was used, whose points range from completely agree (5) to completely disagree (1).

The researcher used (Lin et al., 2013) scale to measure E-WOM. While (Coco et al., 2014) scale was used to measure the (emotional contagion).

Table (1): The questionnaire items

Variables	Measurement Items	References
Emotional Contagion	<p>1) Positive Emotional Contagion</p> <ol style="list-style-type: none"> 1. Being with a happy person picks me up when I'm feeling down. 2. When someone smiles warmly at me, smile back and feel warm inside. 3. Being around happy people fills my mind with happy thoughts. 4. When I looks into the eyes of the one, I love, my mind is filled with thoughts of romance. 5. I melt when the one I love holds me close. 6. I sense my body responding when the one I love touches me. 	(Coco et al., 2014)
	<p>2) Negative Emotional Contagion</p> <ol style="list-style-type: none"> 1. Watching the fearful faces of victims on the news makes me try to imagine how they might be feeling. 2. I notice myself getting tense when I'm around people who are stressed out. 3. Listening to the shrill screams of a terrified child in a dentist's waiting room makes me feel nervous. 4. I clench my jaws and my shoulders get tight when I see the angry faces on the news. 5. It irritates me to be around angry people. 6. I tense when overhearing an angry quarrel. 7. If someone I'm talking with begins to cry, I get teary-eyed. 8. I get filled with sorrow when people talk about the death of their loved one. 9. I cry at sad movies. 	

Continue

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Table (1): The questionnaire items Continued

Variables	Measurement Items	References
E-WOM (The dependent variable)	<p>1) E-WOM Quality</p> <ol style="list-style-type: none"> 1. When browsing the internet, I find clear comments. 2. When browsing the internet, I find comments incomprehensible. 3. When browsing the internet, I find the comments helpful. 4. When browsing the internet, I find comments I can trust. 5. When browsing the internet, I find sufficient reasons to support opinions. 6. In general, the quality of all comments is increased. 	(Lin et al., 2013)
	<p>2) E-WOM Quantity</p> <ol style="list-style-type: none"> 1. The number of reviews reflects the acceptance of the product by consumers. 2. The large number of comments reflected that the product was selling well. 3. The abundance of advice reflects that the product has a good reputation. 4. The number of reviews reflects the acceptance of the product by consumers. 	
	<p>3) Sender's Experience</p> <ol style="list-style-type: none"> 1. I think the people making the comments are experienced. 2. I think the people who do the reviews have ample information about the product. 3. I think the people who rate the reviews have the ability to judge a product. 4. The person making the comments offers a few different ideas from other sources. 	

Source: Prepared by the researchers based on Literature Review.

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Population and Sample Size:

It can be divided into main parts as follows:

Population and sampling:

The population is the set of elements that we want to infer about a specific phenomenon. Therefore, the population must be clear before taking the sample through it (Scheaffer, 1999). In light of the current research, the research population is represented in all Mobile Phones Customers of Social Networking Sites in Egypt. Table (2) shows the population in Egypt and the number of users of the social networking site Facebook, as follows.

Table (2): The number of Facebook users in Egypt until 2021

Population of Egypt	The number of internet users in Egypt	Percentage	The number of Facebook user	Percentage
104,258,327	54,741,493	52.5%	51,420,000	49.3%

Source: <https://www.internetworldstats.com/africa.htm#eg>

According to (Kothari, 2004) using samples has a lot of advantages like; saving money, and time, and having the ability to generalize research results to the whole population. The research must depend on a sufficient sample size to generalize the results to the whole population. Such generalization significantly contributes to enhancing the research's external validity.

There are two main sampling techniques. The first technique is probability sampling and the second is non-probability sampling. The current research has adopted the probability sampling technique because the probability samples have an important advantage in that each member of the sample has an equal and known probability to be chosen. Thus, probability samples allow results to be generalized to the whole population. Therefore, probability samples are the most common technique of use related to survey-based research (Acharya et al., 2013).

Sampling Unit:

According to (Kothari, 2004) explained that before selecting the sample, researchers should determine the sampling unit which may be a social unit such as an individual or a geographical unit like a city or a village. Since the current research aims to explore the effect of customer engagement on E-

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WOM by mediating emotional contagion of Social Networking Sites of Mobile Phones' Customers in Egypt, Thus, the research sampling unit is represented by each customer who purchases mobile from Social Networking Sites.

Sampling Frame:

According to (Kothari, 2004), the sampling frame is a list containing all units from which a sample can be chosen. In order to determine the frame for taking the sample for the current research, the researcher choose Facebook as the most popular networking site all over the world.

Sample Size:

The research population is represented by all Social Networking Sites of Mobile Phones' Customers in Egypt. Due to the lack of the research population frame and its difficulty in determining the size of the population. By relying on the population of customers who use networking sites, it was found that the number exceeds 1000,000 individuals. Therefore, the research population exceeds 1000,000 members. Thus, according to (Saunders et al., 2016) who explained that the appropriate sample size depends on several factors such as the type of statistical analysis used in the research, the margin error, the level of confidence, and the population size. So that, the sample size is **384** at 95% confidence level and a margin error equals 5%.

Data Analysis & Hypothesis Testing

Sample Description:

Table (3) illustrates the sample's characteristics concerning the customers' gender, age, education level, monthly income and social status.

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Table (3): Sample Description (N= 312)

Characteristics	Frequency	Percent
Gender		
Male	178	57%
Female	134	43%
Total	312	100%
Age		
Less than 30 years	93	29.8%
From 30: Less than 40 years	121	38.7%
From 40: Less than 50 years	57	18.3%
50 years an above	41	13.2%
Total	312	100%
Educational Level		
Not Graduated from university	32	10.2%
Bachelor's degree	197	63%
Post-graduate	83	26.8%
Total	312	100%
Monthly Income		
Less than 3000 E. P	62	19.7%
From 3000: Less than 5000 E. P	87	28%
From 5000: Less than 10000 E. P	112	36%
10000 E.P and above	51	16.3%
Total	312	100%
Social Status		
Single	73	23.3%
Married	229	73.4%
Widowed	4	1.3%
Divorced	6	2%
Total	312	100%

Source: Prepared by the researches based on statistical analysis results of SPSS.

Table (3) shows that 57% (178) of customers are male, while 43% (134) are female. With regard to customers' age, 38.7% (121) were aged between 30 to less than 40 years, 29.8% (93) were less than 30 years, 18.3% (57) were aged between 40 to less than 50 years, finally 13.2% (41) were aged 50 years and above.

According to education Level, about 63% (197) of customers are graduated, 26.8% (83) of customers are post-graduated, Finally, 10.2% (32) of the customers are not Graduated from university.

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In terms of monthly income, about 36% (112) of customers their monthly income ranged from 5000: Less than 10000 E. P, 28% (87) of customers their monthly income ranged from 3000: Less than 5000 E. P, while 19.7% (62) of customers their monthly income is less than 3000 E. P. Finally, 16.3% (51) of customers their monthly income is 10000 E.P and above.

Lastly, according to social status, about 73.4% (229) of customers are married, While, 23.3% (73) of customers are single, 2% (6) of customers are divorced, Finally, 1.3% (4) of customers are widowed.

Data Descriptive Analysis:

Descriptive Analysis for the research variables and dimensions:

The research variables are Emotional Contagion and E-WOM which contains three dimensions (E-WOM Quality, E-WOM Quantity, Sender’s Experience). The results of the descriptive analysis of these variables and their dimensions have resulted in the following table (4.)

Table (4): Descriptive analysis of the variables (N=312)

Variables	Dimensions	Mean	Std. Deviation
Emotional Contagion		3.87	0.563
E-WOM	E-WOM Quality	4.26	0.543
	E-WOM Quantity	4.09	0.607
	Sender’s Experience	4.01	0.572
Mean of E-WOM		4.12	0.503

Source: Source: Prepared by the researches based on Statistical Analysis Results of SPSS.

Table (4) shows that:

- 1) As for the independent variable Emotional Contagion, the research sample respondents according to the mean tend to positively. The value of mean is (3.87) which indicates a general perception of the research sample respondents regarding Emotional Contagion.
- 2) As for the dependent variable E-WOM, the research sample respondents according to the mean tend to positively. The value of mean is (4.12) which indicates a general perception of the research sample positively regarding E-WOM. As for E-WOM dimensions, E-WOM Quality scored the first arrangement according to the mean with a value (4.26) and a value with standard deviation reached (0.543). While, E-WOM Quantity came in the second arrangement according to the mean with a value (4.09) and a value with standard deviation

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reached (0.607). Sender’s Experience came in the last arrangement according to the mean with a value (4.01) and a value with standard deviation reached (0.572).

Descriptive Analysis for the questionnaire's items:

According to (Byrne, 2010), examining data before the statistical analysis is a very important step before testing the measurement model using structural equation modeling (SEM). Also, (Kline, 2011) indicated that to ensure that the data is belonging to the normal distribution, the values of skewness coefficient must be range between (± 3) and for kurtosis coefficient the values ranges must be between (± 10) for the items used to measure each variable. the results of the descriptive analysis for research variables items can be clarified as shown in the following table (5).

Table (5): Descriptive statistics for the questionnaire's items (N= 312)

Constructs' items	Item Code	Mean	Std. Deviation	Skewness	Kurtosis
Emotional Contagion	EC.1	3.49	1.044	-0.502	-0.745
	EC.2	3.70	1.222	-0.908	0.589
	EC.3	3.79	0.997	-0.912	0.286
	EC.4	4.02	1.064	0.143	1.697
	EC.5	3.91	0.822	0.126	0.251
	EC.6	3.08	1.101	-1.181	-1.217
	EC.7	3.17	1.371	-0.903	-1.074
	EC.8	3.51	1.297	-0.639	1.387
	EC.9	3.62	0.775	-0.704	0.920
	EC.10	3.66	0.868	-0.917	0.419
	EC.11	3.13	0.763	-0.336	0.466
	EC.12	3.50	0.672	-1.454	0.491
E-WOM					
E-WOM Quality	EQ.1	4.42	0.671	-1.214	-0.820
	QE.2	4.03	0.828	-0.681	1.132
	EQ.3	4.43	0.751	-0.274	1.927
	EQ.4	4.45	0.660	-0.566	0.043
	EQ.5	4.36	0.657	-0.135	-0.662
E-WOM Quantity	ET.1	4.01	0.776	-0.926	0.035
	ET.2	4.19	0.743	-0.329	-0.827
	ET.3	4.02	0.730	-0.404	0.690
	ET.4	4.39	0.678	-0.241	-0.778
Sender’s Experience	SE.1	3.74	0.974	-0.524	-0.345
	SE.2	4.05	0.787	0.624	0.927
	SE.3	3.84	0.868	-0.884	0.427
	SE.4	3.68	0.826	0.429	0.826
	SE.5	4.17	0.713	-0.687	-0.614

Source: Prepared by the researches based on Statistical Analysis Results of SPSS.

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Table (5) indicates that:

- 1- The results of the statistical analysis showed that all items used to measure each variable follow the normal distribution. The values of skewness coefficient ranged between (± 3) and for kurtosis coefficient the values ranged between (± 10).
- 2- The mean of the scale items ranged between (3.08: 4.45). The fourth item of E-WOM Quality (EQ.4) recorded the highest value of the mean for the scale items. While the sixth item of Emotional Contagion variable (EC.6) recorded the lowest value of the mean.

The researchers conducted the Common Method Bias (CMB) test using Harman's single factor test in order to determine the extent to which the study's measurement influence its results, and if there are differences between the answers of the respondents and the results reached by the researcher, then this means that there is bias and interference in the research methodology in a way that affects the answers of the respondents (Podsakoff, et al., 2003). Therefore, this test was performed by grouping all the scale items into one factor only to determine the percentage of interpretation of these factors. If the coefficient of variation is less than 50%, it is acceptable. The value of (CMB) is 25.53% that is acceptable according to Byrne (2010), since it is lower than 50%.

Data Analysis: Measurement Model Assessment

Introduction

Structure equation modelling, according to Byrne (2010), is a statistical model that uses a confirmatory approach to assess a structural theory based on some events. It's used to figure out how dependent and independent variables are related. The assessment of the measurement model and the assessment of the structural model are the two primary aspects of SEM (Fornell&Larcker, 1981). The study depends on smart PLS3 for testing the research hypotheses.

7.3.2) Measurement Model

Before testing the significance of structure model's relationships, the researcher should test the reliability and validity of the measurement model (Fornell&Larcker, 1981). The researcher tested the internal consistency of the study's measurement through individual item reliability, construct reliability, convergent and discriminant validity indicators.

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Individual Item Reliability

The researcher depended on combined loadings and cross loadings to test the individual item reliability. The cross loadings of all 60 observed items were calculated using Smart PLS3 that are loaded on the specified latent variables. According to Hair et al. (2014), the loading should be equal to 0.5 or more and their P - values should be equal to 0.5 or less. Consequently, the researcher deleted all items that did not match these criteria. As a result, the final items used to measure Emotional Contagion, and E-WOM were 36 items. The items (ET3/ EC7/ EC9/ EC10) reached less than 0.5, So the researcher deleted these items. The table (6) shows cross loadings of measurement's items.

Table (6): Cross loading for measurement items

	Contagion	Quality	Quantity	Experience
CN.1	0.426	0.113	0.193	0.162
CN.2	0.378	0.093	0.164	0.161
CN.3	0.484	0.168	0.165	0.114
ET.1	0.279	0.001	0.086	0.153
ET.2	0.129	-0.021	0.055	0.056
ET.3	-0.021	-0.091	0.008	0.028
ET.4	0.138	0.029	0.048	0.083
BV.1	0.554	0.129	0.192	0.148
BV.2	0.559	0.104	0.177	0.128
BV.3	0.560	0.192	0.241	0.227
EC.1	0.620	0.140	0.238	0.199
EC.2	0.654	0.265	0.270	0.164
EC.3	0.628	0.246	0.265	0.136
EC.4	0.704	0.321	0.353	0.258
EC.5	0.628	0.300	0.296	0.170
EC.6	0.507	0.033	0.106	0.035
EC.7	0.483	0.036	0.093	0.085
EC.8	0.601	0.408	0.405	0.355
EC.9	0.251	0.183	0.142	0.227
EC.10	0.465	0.382	0.326	0.359
EC.11	0.620	0.548	0.491	0.474
EC.12	0.658	0.587	0.497	0.408
EQ.1	0.404	0.667	0.487	0.490
QE.2	0.368	0.739	0.403	0.365
EQ.3	0.333	0.774	0.497	0.453

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	Contagion	Quality	Quantity	Experience
EQ.4	0.423	0.778	0.648	0.514
EQ.5	0.452	0.753	0.709	0.569
ET.1	0.402	0.639	0.780	0.538
ET.2	0.375	0.485	0.710	0.405
ET.3	0.472	0.623	0.834	0.587
ET.4	0.403	0.549	0.775	0.604
SE.1	0.424	0.556	0.645	0.804
SE.2	0.211	0.294	0.332	0.633
SE.3	0.152	0.275	0.283	0.592
SE.4	0.265	0.486	0.512	0.789
SE.5	0.417	0.615	0.616	0.843

Source: Prepared by the Researches based on Statistical Analysis Results of SPSS.

Reliability assessment- Internal consistency reliability

Both Cronbach's alpha coefficient and composite Reliability (CR) are the best measures of internal consistency reliability. Hair et al. (2014) stated that the value of Cronbach's alpha coefficient and Composite Reliability must be more than 0.7 to be acceptable. Table (5) shows the values of Cronbach's alpha coefficient and Composite Reliability. All results mentioned in table (7) are more than 0.7, which reflect that the research's measures achieve high level of internal consistency reliability.

Table (7): Reliability Assessment for variables

Variables	Cronbach's Alpha	Composite Reliability
Emotional Contagion	0.812	0.854
E-WOM Quality	0.796	0.860
E-WOM Quantity	0.780	0.858
Sender's Experience	0.802	0.855

Source: Prepared by the Researches based on Statistical Analysis Results of SPSS.

Validity Assessment – Convergent Validity

The extent to which the measurement scale measures the construct it is supposed to assess is referred to as validity. The degree to which all items of a certain measurement are connected and measure one latent variable is known as convergent validity (Hair et al., 2014). The convergent validity is assessed using the Average Variance Extracted (AVE). For each variable, the value of (AVE) must be greater than 0.5. (Hair et al., 2014). Table (8) displays

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the AVE value for each study's variable, and all AVEs are larger than 0.5, indicating that the measures are consistent.

Table (8): Average Variance Extracted

Variables	AVE
Emotional Contagion	0.563
E-WOM Quality	0.552
E-WOM Quantity	0.602
Sender's Experience	0.548

Source: Prepared by the Researches based on Statistical Analysis Results of PLS3.

Validity Assessment – Discriminant Validity

Discriminant validity refers to the extent to which each construct is distinct from other constructs in the study. The discriminant validity is determined by AVE's square roots. If the AVE square roots for each construct is more than its shared variance, the discriminant validity will be satisfied (Fornell&Larcker, 1981). Table (9) shows the AVE's square root for each construct in the study. As shown in the table (9), the AVE's square root for each construct is higher than the correlation between the constructs, which reflect high level of discriminant validity for all constructs.

Table (9): Factor correlation Matrix with Square Roots of AVE

	Contagion	Quality	Quantity	Experience
Contagion	0.626			
Quality	0.502	0.743		
Quantity	0.514	0.632	0.776	
Experience	0.401	0.641	0.692	0.737

Source: Prepared by the Researches based on Statistical Analysis Results of PLS3

Data Analysis: Structural Model Assessment

To investigate the causal links between research constructs and test the research hypotheses, the researcher used structural equation modelling. To determine the level of model fit, the researchers used the Average Path Coefficient (APC), Average R-squared (ARS), and Average Variance Inflation Factor (AVIF) measurements. According to Kock (2013), the APC and the ARC are significant if ($P < 0.05$) and the AVIF value is less than 5. The value of these measures is shown in Table (10), indicating that a satisfactory fit model was attained.

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Table (10): Model fit indices

Fit Measure	Actual Values	P-Values	Accepted Fit	Result
APC	2.824	P< 0.001	P< 0.05	Accepted
ARS	3.628	P< 0.001	P< 0.05	Accepted
AVIF	4.262		Good if AVIF < 5	Accepted

Source: Prepared by the Researches based on Statistical Analysis Results of PLS3.

Hypotheses Testing:

The researcher used path analysis to test the research hypotheses as shown in table (11) as follows:

Table (11): The path coefficient

H	Independent Variables	Dependent Variables	Path Coeff. (β)	P-value	Results
Direct effects					
H1a	Emotional Contagion	E-WOM Quality	0.426***	0.000	Accepted
H1b	Emotional Contagion	E-WOM Quantity	0.377**	0.000	Accepted
H1c	Emotional Contagion	Sender's Experience	0.411***	0.000	Accepted

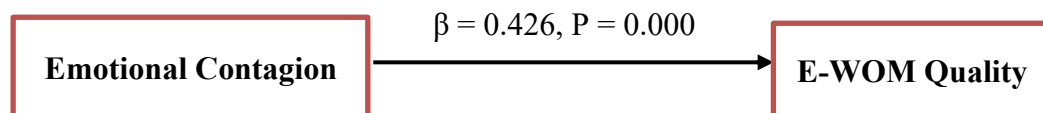
* Significant at 0.05, ***Significant at 0.000

Source: Prepared by the Researches based on Statistical Analysis Results of PLS3

The direct effect of Emotional Contagion on E-WOM Quality:

There is a significant, positive, and direct effect of Emotional Contagion on E-WOM Quality (β= 0.426, P= 0.000), with medium size effect (f²=0.23). Therefore, **H1a is accepted.**

Figure (2): Results of the direct effect of Emotional Contagion on E-WOM Quality



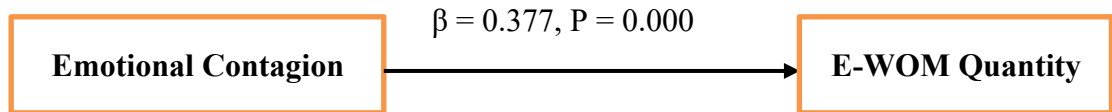
Source: Prepared by the Researches based on Statistical Analysis Results of PLS3

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The direct effect of Emotional Contagion on E-WOM Quantity:

Figure (3) shows that there is a significant, positive, and direct effect of Emotional Contagion on E-WOM Quality ($\beta = 0.377$, $P = 0.000$) with medium effect size is ($f^2=0.29$). So, **H1b is accepted.**

Figure (3): Results of the direct effect of Emotional Contagion on E-WOM Quantity

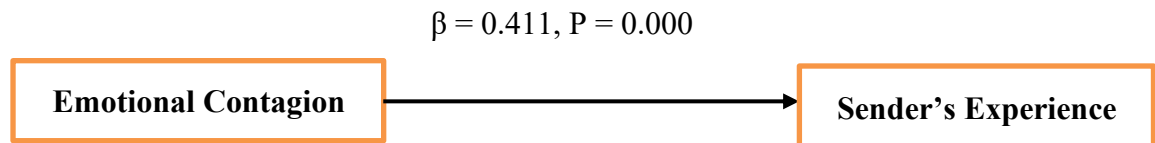


Source: Prepared by the Researches based on Statistical Analysis Results of PLS3

The direct effect of Emotional Contagion on Sender's Experience:

Figure (4) shows that there is a significant, positive, and direct effect of Emotional Contagion on Sender's Experience ($\beta = 0.411$, $P = 0.000$) with medium effect size is ($f^2=0.21$). So, **H1c is accepted.**

Figure (4): Results of the direct effect of Emotional Contagion on Sender's Experience



Source: Prepared by the Researches based on Statistical Analysis Results of PLS3

The Significant Differences testing

The Significant Differences according to Gender:

The researcher used (t-test) to test the significant differences between customers opinions according to gender regarding to customer engagement, emotional contagion, and E-WOM as shown in the following table (12).

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Table (12): Customers’ perception differences of research variables according to Gender

Variables	Gender	N	Mean	T-Value	P-Value	Results
Emotional Contagion	Male	178	3.37	1.982	0.733	Rejected
	Female	134	3.23			
E-WOM	Male	178	4.14	0.782	0.429	
	Female	134	4.09			

Source: Prepared by the researchers based on Statistical Analysis.

Table (12) shows that there are non-significant differences between customers opinions according to gender regarding to emotional contagion, and E-WOM ($P > 0.05$). So, **H2a is rejected**.

The Significant Differences according to Age:

The researcher used ANOVA to test the significant differences between customers opinions according to age regarding to customer engagement, emotional contagion, and E-WOM as shown in the following table (13).

Table (13): Customers’ perception differences of research variables according to Age

Variables	Age	N	Mean	P- Value	Result
Emotional Contagion	from 20 to less than 30 years	93	3.23	0.007	Accepted
	from 30 to less than 40 years	121	3.43		
	from 40 to less than 50 years	57	3.52		
	50 years and above	41	3.39		
E-WOM	from 20 to less than 30 years	93	3.91	0.908	Rejected
	from 30 to less than 40 years	121	4.11		
	from 40 to less than 50 years	57	4.17		
	50 years and above	41	4.12		

Source: Prepared by the Researchers based on Statistical Analysis.

Table (13) shows that there are significant differences between emotional contagion, there are significant differences between customer's opinions according to age, and these differences tend to the age category (from 40 to less than 50 years) because its mean (4.02) is the highest compared to other

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age categories. Finally, there are no significant differences between customers' opinions according to age regarding E-WOM ($P > 0.05$).

Thus, H2b is partly accepted.

The Significant Differences according to Educational Level:

The researcher used ANOVA to test the significant differences between customers opinions according to educational level regarding to emotional contagion, and E-WOM as shown in the following table (14)

Table (14): Customers' perception differences of research variables according to Educational Level

Variables	Educational Level	N	Mean	P-Value	Result
Emotional Contagion	Not Graduated from university	32	3.52	0.001	Accepted
	Bachelor's degree	197	3.44		
	Post-graduate	83	3.37		
E-WOM	Not Graduated from university	32	4.03	0.027	
	Bachelor's degree	197	4.16		
	Post-graduate	83	4.08		

Source: Prepared by the Researchers based on Statistical Analysis.

Table (14) indicates that there are significant differences between customer's opinions according to the educational level regarding emotional contagion, there are significant differences between customers' opinions according to educational level, and these differences tend to the educational level (Not Graduated from university) because it's mean (3.52) is the highest compared to other educational levels. Finally, there are significant differences between customers' opinions according to the educational level regarding E-WOM, and these differences tend to the educational level (Bachelor's degree) because its mean (4.16) is the highest compared to other educational levels. **Thus, H2c is accepted.**

The Significant Differences according to Monthly Income:

The researcher used ANOVA to test the significant differences between customers opinions according to monthly income regarding to emotional contagion, and E-WOM as shown in the following table (15)

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Table (.15): Customers' perception differences of research variables according to Monthly Income

Variables	Monthly Income	N	Mean	P- Value	Results
Emotional Contagion	Less than 3000 E. P	62	3.32	0.662	Rejected
	From 3000: Less than 5000 E. P	87	3.41		
	From 5000: Less than 10000 E. P	112	3.55		
	10000 E.P and above	51	3.44		
E-WOM	Less than 3000 E. P	62	4.01	0.822	
	From 3000: Less than 5000 E. P	87	4.14		
	From 5000: Less than 10000 E. P	112	4.07		
	10000 E.P and above	51	4.10		

Source: Prepared by the researchers based on Statistical Analysis.

Table (15) shows that there are non-significant differences between customers opinions according to monthly income regarding to emotional contagion, and E-WOM ($P > 0.05$). So, **H2d is rejected**.

The Significant Differences according to Social Status:

The researcher used ANOVA to test the significant differences between customers opinions according to social status regarding to emotional contagion, and E-WOM as shown in the following table (16)

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Table (16): Customers' perception differences of research variables according to social status

Variables	Monthly Income	N	Mean	P- Value	Results
Emotional Contagion	Single	73	3.61	0.073	Rejected
	Married	229	3.66		
	Widowed	4	3.47		
	Divorced	6	3.40		
E-WOM	Single	73	4.07	0.001	Accepted
	Married	229	4.19		
	Widowed	4	3.91		
	Divorced	6	3.89		

Source: Prepared by the researchers based on Statistical Analysis.

Table (16) shows that there are significant differences between customers opinions according to age regarding to emotional contagion, there are non-significant differences between customers opinions according to social status ($P > 0.05$). Finally, there are significant differences between customers opinions according to social status regarding to E-WOM. These differences tend to the social status category (Married), because it's mean (4.19) is the highest compared to other social status categories. Thus, **H2e is partly accepted.**

Discussion:

The main objective of this research is to examine the direct effect of emotional contagion on electronic word of mouth Smart PLS3 was used to evaluate the relationship between the study variables. The study showed the following results:

The effect of emotional contagion on E-WOM dimensions (E-WOM Quality, E-WOM Quantity, and Sender's Experience):

The results indicated that emotional contagion has a direct, significant, and positive effect on E-WOM dimensions respectively ($\beta = 0.326$, $P = 0.000$; $f^2 = 0.23$), ($\beta = 0.277$, $P = 0.000$; $f^2 = 0.29$), ($\beta = 0.311$, $P = 0.000$; $f^2 = 0.21$). These results are with agreement with the results of the previous studies (Hyvärinen & Beck, 2018 & Septianto & Chiew, 2018).

There are significant differences between customers opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding to emotional contagion, and E-WOM.

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The results indicated the significant differences between customers opinions according to their demographic characteristics (gender, age, social status, educational level, monthly income) regarding to emotional contagion, and E-Wom. The results found that there are no significant differences between customers opinions according to gender and monthly income. While there were significant differences between customers opinions according to educational level. Besides, there were significant differences between customers opinions about emotional contagion only according to age, these results show that there is a discrepancy between the opinions of customers about their perception of the variables of the study according to their different demographic variables, which is a logical result given that electronic customers are often affected by different factors other than regular customers

Theoretical Implications:

The current study contributes to the body of knowledge of the existing literature of emotional contagion, and E-WOM. Also, the study aimed to fill the knowledge gap focusing on the effect of emotional contagion on E-WOM. Therefore, the current study has some theoretical implications, which can be summarized in the following points:

- 1) The current study contributes to a broader and more comprehensive understanding of the most important of emotional contagion and knowing the extent of its effect on dimensions of E-WOM.
- 2) the current study touched on examining the significant differences of the opinions of the study sample regarding the study variables according to a set of demographic variables that have a noticeable effect on the answers of the sample, and in for this, the demographic variables (gender, age, educational level, monthly income, social status) were selected because these variables are closely related to the study sample.

Practical Implications:

The current study was prepared based on reviewing previous studies and noticing a lack of studies that focused on the link between emotional contagion and dimensions of E-WOM. Therefore, the study directed towards examining the role of emotional contagion that were used in previous studies in a small percentage in studying their effect on E-WOM in an experimental and field manner in the light of reviewing previous studies. The results of the current study provide some practical contributions as follows:

providing a full understanding of emotional contagion, and E-WOM.

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The study proved that emotional contagion has a vital role on E-WOM, therefore, customers' knowledge of all aspects of emotional contagion benefits them more in interpreting E-WOM

Recommendations:

In the light of the practical implications, the study provides several recommendations for online stores as follows:

1. The need to pay attention to build strong emotional contagion because it will positively affect the increase in sales of online stores.
2. The need to pay attention to build electronic trust because it will push customers to trust the online store and talk about it positively through E-WOM.
3. The need to pay attention to build the dimensions of the brand value, not only for marketing objectives, but also for its role in creating the electronic word of mouth.

Conclusion:

The research model of this study estimates the direct and indirect effects of emotional contagion on E-WOM dimensions. Where the researcher noticed, through the exploratory study, the visit of large numbers of customers through social networking sites to the pages and websites of mobile phones. Some previous studies have found that there is a significant correlation between emotional contagion and E-WOM, it represents a research gap that the current study covered.

Limitations and Future Research Directions:

Despite the theoretical contributions made by the current study in light of the hypothesis results test, there are some limitations that characterize the current study, which could lead researchers to proposals for future research ideas, which can be explained in the following points:

- 1) Future research can use electronic trust as a mediator variable and examine its effect in the relationship between emotional contagion and E-WOM.
- 2) Future research can use brand value as a mediator variable in the relationship between emotional contagion and E-WOM.
- 3) Brand engagement can be used as a mediator in the relationship between electronic customer relationship management and E-WOM.

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تأثير العدوى العاطفية على الكلمة المنطوقة الإلكترونية بالتطبيق على عملاء علامة التليفون المحمول بمواقع التواصل الاجتماعي بمصر

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ملخص البحث:

تسعى هذه الدراسة لبحث العلاقة بين العدوى العاطفية والكلمة المنطوقة الإلكترونية (جودة الكلمة الإلكترونية المنطوقة، كمية الكلمة الإلكترونية المنطوقة، خبرة المُرسِل) بالتطبيق على عملاء علامة التليفون المحمول بمواقع التواصل الاجتماعي بمصر. وقد بلغ حجم العينة ٣٨٤ مفردة في حين أن عدد الاستمارات الصحيحة التي تم ادخالها الى البرنامج ٣١٢. أظهرت نتائج الدراسة إلى وجود تأثير إيجابي معنوي للعدوى العاطفية على أبعاد الكلمة المنطوقة الإلكترونية (جودة الكلمة الإلكترونية المنطوقة، كمية الكلمة الإلكترونية المنطوقة، خبرة المُرسِل). توجد فروق ذات دلالة إحصائية بين آراء العملاء وفقاً لخصائصهم الديموغرافية (الجنس، والعمر، والحالة الاجتماعية، والمستوى التعليمي، والدخل الشهري) فيما يتعلق بالعدوى العاطفية، وأبعاد الكلمة المنطوقة الإلكترونية (جودة الكلمة الإلكترونية المنطوقة، كمية الكلمة الإلكترونية المنطوقة، خبرة المُرسِل).