Emoji's Multi-Interpretation Effect on the Intended Emotion

Adamu Abubakar Ibrahim[1], Ibrahim Dahiru Idriss[2], Jaafar Zubairu Maitma[3]
[1]Department of computer Science, International Islamic University Malaysia. Malaysia
[2]Department of Primary Education Federal College of Education (Technical) Potiskum Yobe State, Nigeria.
[3]Department of Information Technology Bayero University Kano, Nigeria.
adamu@iium.edu.my

Abstract— There are some questions that are still unanswered about how certain emojis can be used to send the intended message accurately, such as the effect of intentions, perceptions and feelings. The positive effect of positive oral messages is increased by emotions, like shouting or speaking slowly, but emojis may send positive messages which contradict the outcome of certain intended ideas about the message. Therefore, this study investigates whether emoji increase the relationship between the use of direct mood-specific emojis and indirect mood-specific emojis intended interpretation. Experimental analysis on focus group approach with emoji from two mobile messaging applications was conducted with 30 participants divided into control group and alerted group in different experimental sessions. The analysis of the findings indicates that most emoji use are suitable for expressing emotional sensations, but they do not create a time limit to which the emotions get associated with the sign. In addition, the interpretation of communication with multiple emoji in each experimental group interaction was significant, but emoji fail to express the impact on neutral and negative messages to a large degree. Hence, this study contributed to an understanding of the influence of multiple emoji interpretations on the intentionally evoked emotion.

Keywords— Orality, Literacy, Emoj, Electronic communication

I. INTRODUCTION

A communication system consists of the sender and the receiver using words to convey messages in verbal communication, and cues such as body gestures and facial expressions to convey messages in non-verbal communication [1]. In online communication, senders frequently employ emojis or emoticons as a means of expressing themselves and tailoring their messages to the context or situation [2]. Emojis are "digital images that are added to messages in electronic communication" [3]. When it comes to sending messages, the senders may have different intentions. In communication between two or more individuals, nonverbal speaking doesn't imitate facial expressions, but manifests itself physically [4]. Nonverbal behaviour, however, must be taken into consideration. Some observers believe that many of its manifestations are spontaneous and uncontrolled. Compared to an oral assertion, every facial expression holds great significance. People think nonverbal cues are one of the most controlled aspects of communication [5].

To overcome the lack of nonverbal cues, emogi were created. The recipient could understand the sender's emotions when emoji were used. Emoji are utilised for nonverbal communication and make someone appear more amiable and extroverted. Using emoji can increase approachability and competence. Many messaging apps provide the services of emoji, because they understand that utilizing a graphical attribute that indicates specific emotions is necessary [6].

Unfortunately, communicating with emoji might alter people's use of language, but it also helps people have a mix of elements of oral speaking to compensate for missing visual and aural cues [7]. On the other hand, these might also create multiple interpretations of emoji convey the intended emotion. This also leads to an open research question on "to what extent" graphic markers or emoji are added to compensate for the lack of visual information in communication or to what extent it alters correspondence to communicate effectively. Few studies have investigated how various situational factors influence the use of emojis [8].

Considering these issues, with due regard to the positive impact of emojis on increasing interpersonal intimacy. This current study utilized Whatsapp and Telegram basic messaging apps and performed a focus group study. The key unit of measurement is "People hope and expect while communicating with other people understand their feelings, ideas, and impressions, with the use of emojis. The justification leis with people's use of graphic visual communication and its impact on their messages on the internet [9]. In prior research, the usage of emoji and sentiment are examined by a country's economy [9-10], examine the user perception of the display of swapped emoji based on device platform variance [11]. Motivated by the outcome of these studies, this current paper evaluates how emoji interpretations across mobile platforms cause

complications in terms of their interpretation of the intended meaning.

The remaining parts of the paper are organized as follows: Section 2 presents the literature reviews of recent research on emoji. Section 3 presents the research methodology. Section 4 presents the analysis and presentation of the results, while section 5 presents the conclusion of the study.

II. RELATED WORK

There are many previous studies on the impact of the use of emojis. Crucial to this is the work of Ganster et al. [12], which reveals that nonverbal cues from emojis influenced the interpretation of messages and the impression that people had. The experiment compared emoticons and smileys to see how they differ. Smiley faces have a greater influence on the emotional state of the sample. Overall, positive emoticons increased perception or acceptance of a message's good intention, as well as decreased the perceived negativity of the message in the response. Furthermore, when emojis are used in text, they have the effect of altering people's perceptions [13]. Among the many internet-based messaging services, WhatsApp provides non-textual information in a combination of emoticons, images and pictures, voice notes, videos [14]. Additionally, WhatsApp users can communicate with just one or a group of individuals. One of the general views of the adoption of emojis on the messaging apps lies with the fact that they do not just only present graphical symbols, they also portray ideas that can't be expressed in words [15].

Emoji are mostly appreciated as representations of facial expressions. Receivers can understand how the sender feels, which can help to give appropriate feedback on a communication. Using emoji in text messages enables users to feel the impact of messages they receive [16]. Annamalai and Salam [17] found that users of Whatsapp did not always interpret emoji in the same way and, on occasion, misinterpreted them. Furthermore, Stark and Crawford [18] reveal that emojis are used to normalise, capitalise, and focus on the collective strength affect in human social relations online. When people interact with others through text messaging, using graphical accents may spark social expressions in human social relations. Emoji are seen as a cartoon-style for gesture expressions used in text-based communication. They are also seen as merely an act of "noises" and do not convey emotion [19]. Chairunnisa and Benedictus [20] highlighted that people hope, while not communicating face-to-face, that the other person still understands their feelings, ideas, and impressions, something that emojis help make possible. Without realising, people are able to use graphic accents and meaning well and to convey their messages online and offline. Emojis are not just a one-dimensional lens, but can be used to convey feelings, clarify statements, and help define who a person is. [21].

McDougald et al. [22] reveals The use of graphical accents in conjunction with ASCII characters is common when communicating via the computer. In addition to mimicking nonverbal and visual cues, such as facial expressions, it provides additional information to support the intensity of the messages while also altering the vagueness of the text messages themselves. Additional information is provided by visual and nonverbal elements such as graphic accents. Additional clues or cues are used to regulate interactions and communicate intimacy. Emojis are typically used to emphasise the emotional content of text messages that people send to one another [23]. Additionally, Tianran Hu et al. [24]. Indicate that the level of engagement of the recipients is increased by the use of graphic accents. Because they are capable of expressing intimacy and deep affection. Similarly, mimicry is an important component of increased social intimacy, hence emojis have resulted in an increase in interpersonal intimacy. As emojis are used more frequently, the meaning of intimacy becomes more apparent [25].

Typically, when using text messaging, users are allowed to communicate with two or more groups of people who are already acquainted to communicate with one another in a more personal way. Previous studies reviewed [12-25] show that it is unlikely to have people use graphic accents or emojis when messaging if they do not have a personal relationship with the other person. Hence, according to the majority of research, the impact of using emojis is associated with interpersonal relationships. Those research ignore investigating the intended interpretation of emoji delivered by all parties involved in the communication process, including message writers and recipients. Furthermore, Emojis have been found to provide some level of confidentiality, that is, individuals who are not in a relationship would not use emojis with one another, whereas complete strangers might do so [25]. It is also revealed that emoji and other graphic accents are only used by people when they are in their comfort zone [22]. The reason for this is that adding graphic accents to a complete stranger requires not only interpretation, but complete understating in order to avoid misunderstanding of the intended meaning.

III. METHODOLOGY

This study uses qualitative research methodology, specifically it adopts a focus group approach. When conducting qualitative research, interviews and focus groups are the most commonly used methods of data collection [26]. The ongoing evolution of digital technologies, such as video chat and online forums, has further transformed these methods of data collection, even

though they are still primarily conducted face-to-face. Since developing new technologies enables researchers to conduct qualitative research online, focus groups can now be conducted online [27]. Hence, the study adopted an online approach of focus group study.

A. Research Design

Focus group research was conducted using a "True experimental approach," which is primarily concerned with conducting research in a way that the results have a high degree of causal validity (cause and effect) [28]. The reason for this is to allow research to establish scientific and systematic methods of analysing the causal relationships in interpreting an intended emotion from emojis, which will allow for more accurate and systematic results. Because the design is repeatable, this type of design will allow for varying levels of data analysis, which may result in a more controlled environment and the ability to retest the results in the future. Moreover, it is possible to justify that conducting a true experiment is aimed at answering the question of how people will interpret intended emotion from a message they have received that contains multiple emojis. With the help of emojis, this research experiment will attempt to determine the degree to which a person understands the emotion that is being conveyed to him or her. When it comes to experimental design, there are several types to choose from, including: pre-experimental design, true experimental design, quasi experimental designs, and statistical designs.

A True experiment was used in this paper because it refers to an experimental design that involves well-defined variables that are investigated using a randomised approach. The term "true" refers to the variables that are involved in the experiment and are the cause and effect variables. The true experiment is also used to describe all studies that include at least one independent variable that is experimentally manipulated as well as at least one dependent or outcome variable that is experimentally manipulated [29]. It is widely used in the establishment of relationships among variables, and it can be used to determine whether or not there is a cause and effect relationship between variables [30]. In research, the ability to establish and define a variable that is the "cause" and a variable that is the "effect" in a relationship between them within a study population is recognised as the nature of any true experiment. One of the most important characteristics of a true experiment is the provision for its prospective nature, which is based on characteristics of the environment that are used to study areas that are sufficiently narrow in scope. The design always takes into account the subject's narrowing scope as well as the revelations of possible scenarios [29]. Pre-test and post-test control groups are used in true experiment designs, which means that both the pilot experiment and the full experiment are used in the design. It is common practice to have two sets of control groups for an experiment group. These groups are used to ensure the validity of the experimental process and to treat any experimental bias that may have occurred during the process of testing.

B. Conceptualization, Operationalization, and Measurement

This study conceptualized "intentions", "perceptions" and "feelings", that is whether emoji might increase or decrease the interaction of the three variables above. The relationship between the use of direct mood-specific emojis and indirect mood-specific emojis is associated with three variables are measured. The experiment for this current study is based on the concept of conceptualising whether the intended interpretation of the emotion expressed by a combination of multiple emojis is perceived by the participants. Consequently, the variables "intentions," "perceptions," and "feelings" are the research constructs that are used to describe the operational phenomenon of the theoretical interest in the multi-interpretation effect on the intended emotions that are studied. This is the element of the current discourse that serves as a practical substitute for the phenomenon of interest in a practical sense. As a result, the "multi-interpretation effect" and "intended emotion" operations on emoji serve as the research unit of measurement that will be investigated through experiment. Hence, the experimental process is presented in Figure 1.

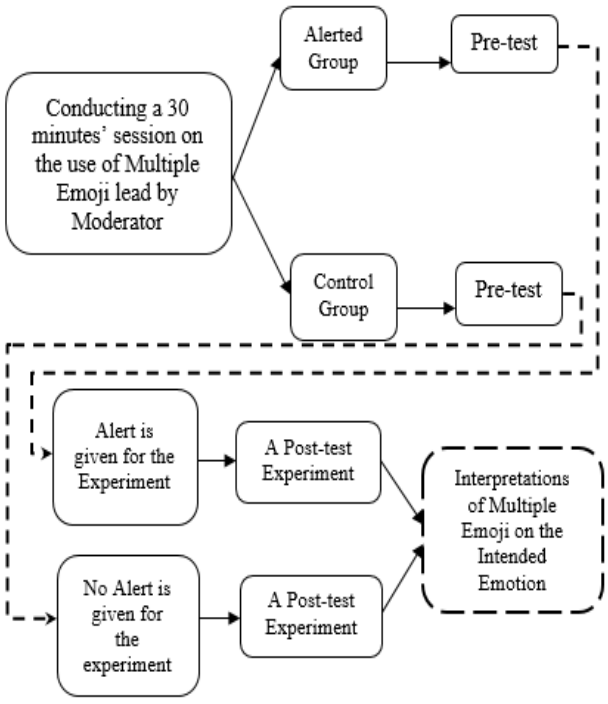
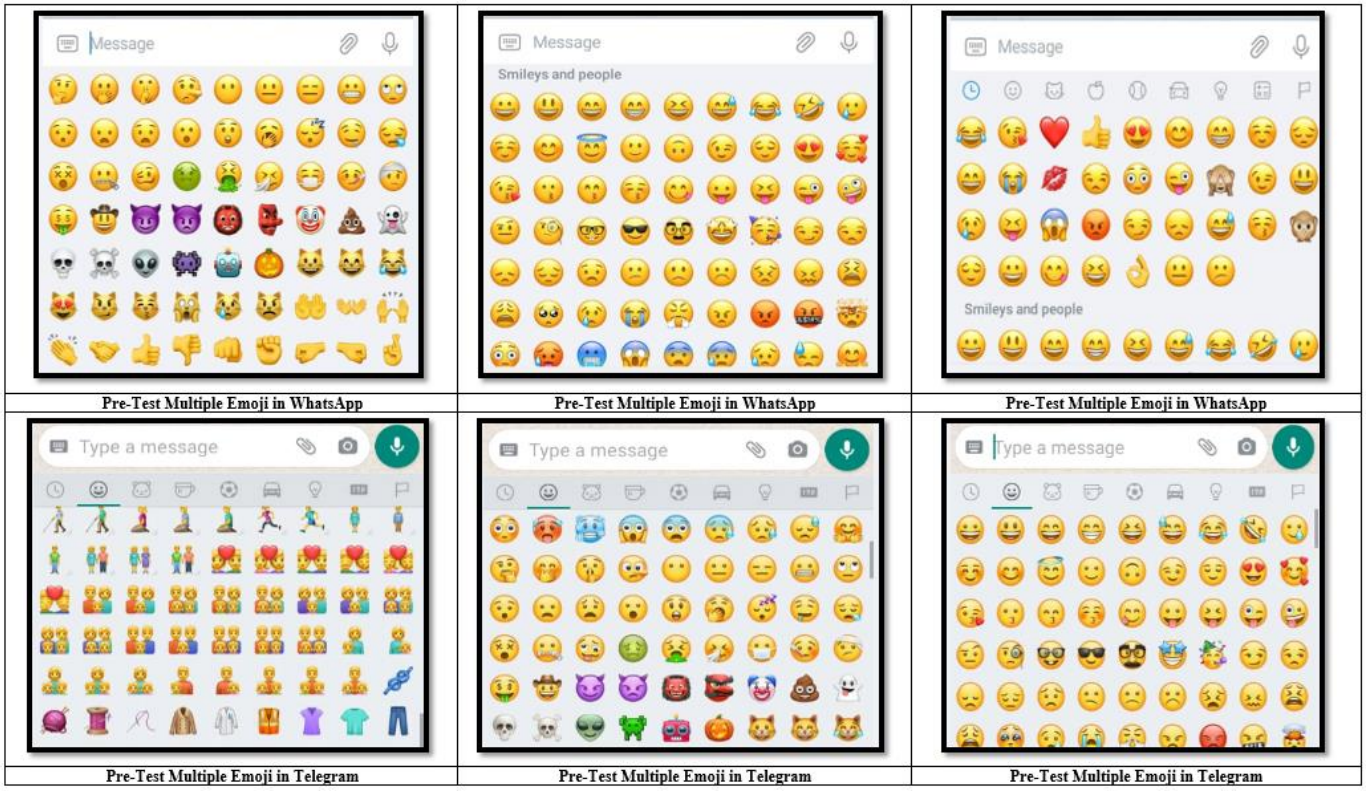


Fig. 1 The Focus Group Experimental Process

When designing and conducting the pre-test experiment, researchers should think about who will be taking part in the

test and how they will be evaluated. As a result, the proposed conceptual model contributes to providing a guide for conducting the experiment. The mobile device that was used for the experiments for both the control and alerted groups is depicted in Figure 2 and 3.



Fig, 2 Pre-test testbeds

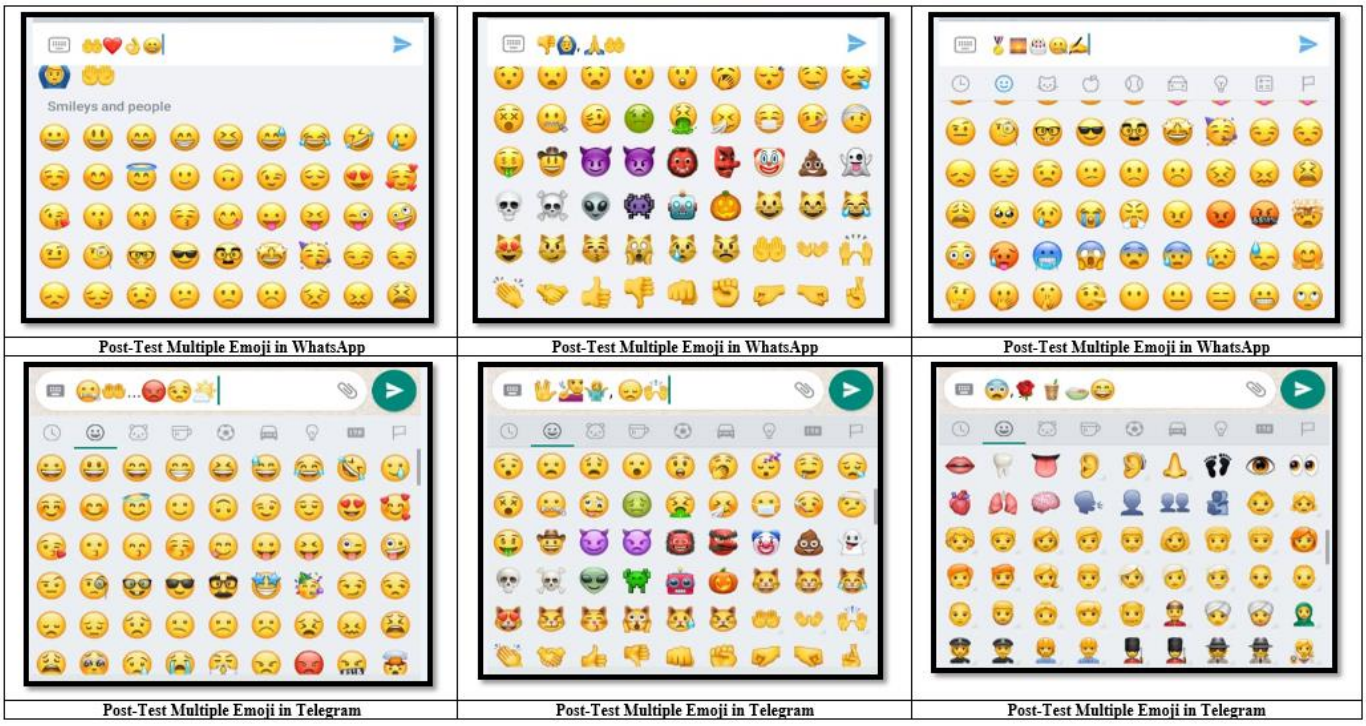


Fig. 3 Post-test testbeds

Figure 2 first row depicts the emojis that were used for the pretest on Whatsapp and the second row depicts the emojis that were used for Telegram. Whereas in Figure 3, the post-test, testbed is presented respectively. The experimental testbed was conducted on a mobile device (Whatsapp and Telegram), and each of the two groups (the 'Control' Group and the 'Alerted' Group) used five people participants for sending and receiving emoji. The participants are shown the mobile interface, which includes emoji, and then the experiment gets under way.

The experimental tasks assigned to the Control's Group consist of "evaluating the interpretations of Emojis on the intended emotion from the Emojis presented to the participants in the testbed provided" and "evaluating the interpretations of Emojis on the intended emotion from the Emojis presented to the participants in the testbed provided." After displaying Emoji on "Whatsapp" and "Telegram," the moderator informs the control group that their job is to examine each emoji with the goal of assessing them when sending messages, but to use them only in multiples. They are then asked to share their thoughts on their experience with the moderator after they have finished speaking. The moderator then follows up with questions that are related to their actions and makes recommendations based on their responses. Was it possible for them to provide a confidence rating for their recommendation along with the aspect of the emoji communication that had the greatest influence on their recommendation?

The 'Alerted' Group is informed that they will be taking part in an emoji study and is provided with a description of how to interpret communication using multiple emojis in multiple languages. The specifics of the emoji used in each experiment, as well as instructions on how to interact with them, were provided before the tasks for examining how the interpretation of communication with multiple emoji were discussed after they completed the experiment.

IV. ANALYSIS AND PRESENTATION OF THE RESULTS

The impact of interpretation of communication with Multiple Emoji on "intentions," "perceptions," and "feelings" has been investigated; this research is geared toward the effectiveness of the use of graphic accents and the development of interpersonal relationships. When comparing "intentions to use multiple emojis," "perception of using multiple emojis," and "feelings about the use of multiple emojis," the correlation results range from 0.089 to 0.91 and 0.913 to 0.089 to 0.91 respectively, all of which are positive. However, at p (0.001), it is still statistically significant. A positive relationship exists between all variables when they interact, according to the results. Consequently, it is possible to conclude that there is significance in the relationship between all of the variables investigated.

The second relationship investigated was the relationship between the use of multiple emojis and the categories of people; the results show a moderate correlation of 0.427, which is below the ideal value of 0.5; however, even though the correlation is moderate in strength, it is still considered valid. According to the findings, there is a positive relationship between the use of multiple emojis and the categories of people because the correlation is greater than 0.05 level (p =.019, r =.427), and the relationship is greater than 0.05 level. As a result, there is a statistically significant relationship in the test.

Finally, we looked at how people used multiple emojis and what they were trying to convey with their actions. The correlation coefficient is 0.518, which is higher than the ideal value of 0.5, indicating that there is a strong relationship. According to the findings, there is a positive relationship between the use of multiple emoji and the intended meaning because the correlation is greater than 0.05 level (p =.003 and r =.518), and the relationship is greater than 0.05 level. Finally, the results show that Sig-p =.003.05, which is a significant value.

On three different experimental scenarios, the ability to interpret multiple emoji during communication, as well as the number of errors with improvements, were examined and evaluated. The results obtained while the participants were completing the experiment focused on the amount of time it took for them to interpret the combination of multiple emojis as shown in Figure 3 to be interpreted. These are recorded during the experiment by the moderator and are compared to those recorded for the control and alert groups. Figure 4 shows the results of the experiment. Figure 4 depicts three different trials that were conducted in this study. It was determined how well the interpreter performed on the three trials.

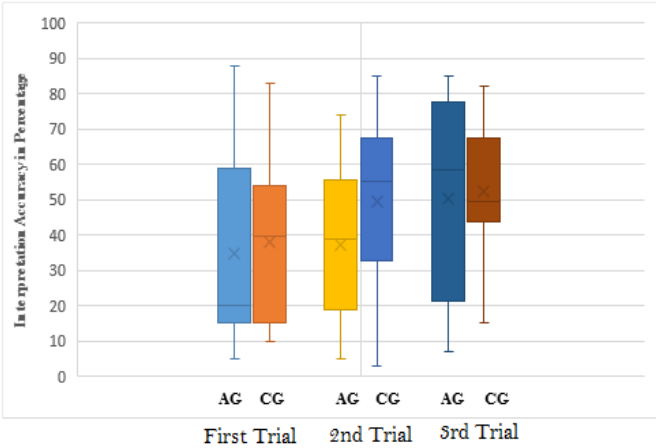


Fig. 4 First round of Interpretation of Multiple Emoji Performance (AG= Alerted Group; CG=Control Group)

In cases where there was more than one emoji, the time required for interpretation increased significantly. The error bars represent standard errors. As a result, the proportion of participants in the control group who used the intervention to interpret communication with Multiple Emojis versus intended emotion was extremely high when using the intervention. Similarly, the experiment was repeated a second time, and there were no significant differences between the results of the first and second experiments (see Figure 5).

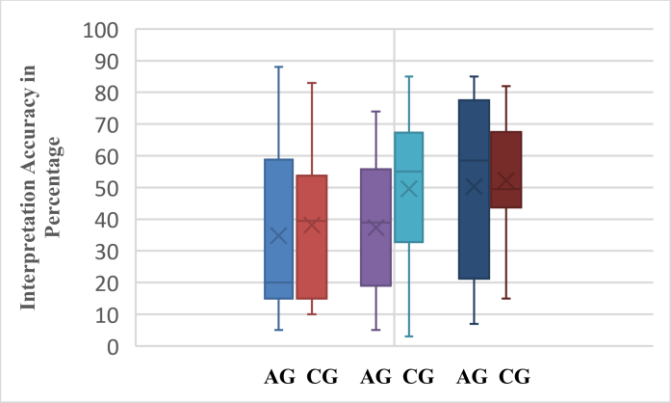


Fig. 5 Second round of Interpretation of Multiple Emoji Performance (AG= Alerted Group; CG=Control Group)

However, a follow-up experiment was also conducted, and there was no statistically significant difference between the first and second groups (see Figure 6).

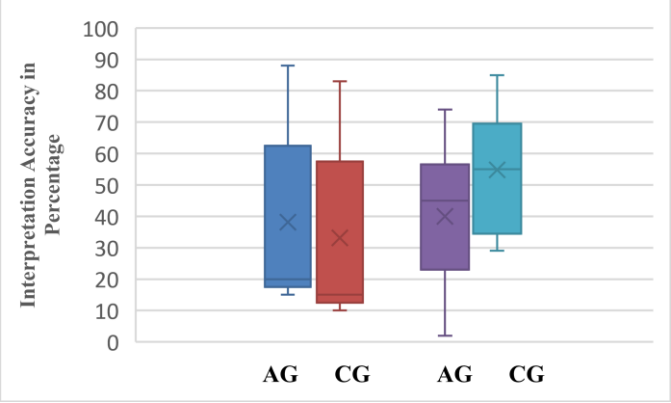


Fig. 6 Last round of Interpretation of Multiple Emoji Performance (AG= Alerted Group; CG=Control Group)

For the purpose of determining the effect of two different trainings on Intended Emotion, the time spent trying to read and understand the combination of emoji, that is, the communication and interpretation, were analysed. Statistically significant differences were found in the interpretation of communication with multiple emoji in each group interaction ($F(1,17) = 4.64$, $p = 0.016$). Following the training, participants in the alerted group showed a significant improvement in their communication interpretation with the Intended Emotion (mean = 2.02, SE = 1.24; post-training mean = 1.51, SE = 0.91, $p = 0.002$). The control group, on the other hand, did not demonstrate any statistically significant differences between their communication and interpretation of Intended Emotion. In other words, when communicating with multiple Emojis, the intended emotion is more likely to be reflected or interpreted, but only when there are multiple combinations of the Emojis available on a particular platform.

It has been discovered that the frequency with which emojis are used is associated with peer group or intimation. It has been stated that the majority of emojis used are appropriate for expressing emotional sensations, but that they do not impose a time limit on how long the emotions are associated with the symbol. Furthermore, Emojis are unable to adequately convey the impact of neutral and negative messages to a significant extent.

V. Conclusions

The impact of interpretation of communication with Multiple Emoji on "intentions," "perceptions," and "feelings" was investigated in order to resolve the questions of whether certain emojis can be used to accurately convey the intended message, such as the effect of intentions, perceptions, and Positive oral messages have a greater positive impact when delivered with emotion, such as shouting or speaking slowly, but emojis can send positive messages that are in direct opposition to the intended outcome of certain intended ideas about the message. For this reason, this study investigates whether the use of emoji increases the relationship between the use of direct mood-specific emojis and the intended interpretation of indirect mood-specific emojis in text messages. It was decided to conduct an experimental analysis on the focus group approach using emoji from two different mobile messaging applications. Following an analysis of the findings, it was discovered that there is a strong correlation between "intentions to use multiple emojis," "perceptions of using multiple emojis," and "feelings about using multiple emojis," among other variables. In addition, it was revealed that the majority of emojis are appropriate for expressing emotional sensations, but that they do not place a time limit on how long the emotions associated with the sign remain active. On three different experimental scenarios, the ability to interpret multiple emoji during communication, as well as the number of errors with improvements, were examined and evaluated. According to the findings, when there was more than one emoji, the time required for interpretation increased by a significant amount.

Finally, this study contributes to the interpretation of communication with multiple emoji and reveals that

interaction with multiple emoji is significant, but that emoji fails to adequately express the impact on neutral and negative messages to a significant degree, as demonstrated by the findings.

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