

## Use of Social Support Agents in Online Pakistani Communities

Mansoor Ahmed Bughio\*, Dr. Adnan Manzoor\*\* , Dr. Irfana Memon\*\*\*

### ABSTRACT

In routine life, Stress is a common factor which can occur as a result of a work deadline, relationship, completing tasks, health issue, etc. It can lead to mental disorder or feeling very tired or irritation in a routine life and day to day affairs, such as flight delaying, heartbroken, getting bored, feeling, sadness and relationship problems are real-life issues related to stress. This research is basically surveyed on social network app on Chatbot messenger chat either people of Pakistan accept this kind of support using the social app on internet and also overcome the daily routine stress of life interact with chatting world either this support helps or not. As participants (an employee of the school education) were selected to interacting social network app Chatbot or Intelligent.

**Keywords:** Chatbot, Testing Acceptability, System Usability Scale.

### 1. INTRODUCTION

There are so many issues in routine life can be categorized in the source of stress like task completion, timeline, tired, health, relation breakup, etc. It can lead to mental disorder or feeling very tired or irritation in a routine of life day to day affairs, such as flight delaying, heartbroken, getting bored, office issues, feeling sadness and relationship problems are real-life issues relate to stress. Stress is a complex phenomenon. Stress is a very general cause for non-smooth functioning of routine life friends and family members can help to overcome stress. It can lead to depression or another kind of mental disorder but here we are dealing with routine life stress. Today fastest communication is Online social network applications are available. An online social network can also help to achieve this task. As participants (an employee of the school education) were selected to interacting social network app chat messenger or intelligent chatbot, intelligent responses can be found as human.

#### 1.2 Social Network Sites

Online Social network Sites are focused on all users in the world. Such as academicians, colleges, researchers, industrialists, militaries, celebrities, etc. <sup>166</sup>

#### 1.3 Chat Messenger

Familiar with the messenger as a just platform keep connect with friends and family to access your messages and conversations when interacting with the messenger app, text, voice or video, etc.

#### 1.4 Social Apps

Social app as computer programs that manage online communities on the internet using a computer, mobile phone or smart devices Facebook Messenger WhatsApp Messenger are common apps.

#### 1.5 Online Social Agents

Advance communication system utilized the environment for share information newly technology computer-based or agent. Online social agents response automatically whenever the user interacts with it, whatever the user asks it generate a response from the knowledge base according to situation and condition.

#### 1.6 System usability scale (SUS)

The System Usability Scale promotes a strong way to measure usability. Further SUS allow participants to scoring responses ranging from Strongly Agree to strongly disagree.

#### 1.7 Problem statement

Stress is a major problem it can lead to many kinds of mental health

†Corresponding author: [mansoor09bscs@gmail.com](mailto:mansoor09bscs@gmail.com)

\*PhD Researcher, Department: of IT, QUEST, Nawabshah, Sindh, Pakistan

\*\*Professor, Department: of IT, QUEST, Nawabshah, Sindh, Pakistan

\*\*\* Associate Professor. Department: of Computer Systems Engineering. OUEST. Nawabshah. Sindh. Pakistan

problems today's fast-paced world we always not close to our family members and friends a virtual buddy could help alleviate the effects of stress. A chatbot can also help us to reduce stress in the absence of family and friends. We have experimented with the people in Pakistan whether our society accepts this social kind of social support (in the form of chatbot).

### **1.8 Aim and Objectives**

Our aim is to help people to reduce routine life stress. The online social network can help to achieve this task, reduce the boredom when people are alone. We evaluate the acceptability of online social network (chatbot Messenger) in a Pakistani people.

## **2. RELATED WORK**

Lenin Medeiros et al. describes two sections first is the development of agent and second is an evaluation of agent in this researcher research on 33 participants to interact with variants of the agent. The result showed an indication agent baseline version generates random messages [1].

L Medeiros et al., discusses that social media are an active way for people to convey day to day issues. As a result, that hypotheses online peer support is shown in the paper[2].

L Medeiros, et al., presents a model of a network for mutual support. They predict that when more stress is experienced [3].

W. Randolph Ford Ingrid et al., analyzed how communication changes when people communicate with an intelligent agent as opposed to with another human. This research is based on seven different variations. The most reasonable explanation was found and also found minimum usage of chatbot [4].

Dr. John Woods et al the design of chatbot & comparison between design steps from nine specific research papers, differences in the strategies,167

improvements in Chatbots intelligent responses are shown [5].

W. Van Breda et al., showed a healthy lifestyle way with the ambient intelligent system also check social interaction [6].

It is proved by SUS valuable evaluation reliable and robust. Measures of usability depend on another subject The System Usability Scale (SUS) is definitive for feedback [7].

Sanchez and Jeffrey et al highlighted work stress in two waycorrelation between social support and physical place stressors [8].

TY Chung, CY Yang, MC Chen et al have come to know the effect of stress coping regarding social app Facebook in different results obtained [9].

The new world interacting created by speedy through online social network came to know factors are driven in social networks in instant communication [10].

## **3. RESEARCH METHODOLOGY**

To evaluate the acceptability of social support network a usability testing was conducted. The questionnaires were filled by the participants to measure the satisfaction attribute of usability for online social chatbot messenger apps under support Stress full situation of work.

### **3.1 Demographic questionnaire**

A demographic questionnaire has been filled by 50 respondents (Employee) of the School Education which covers demographic data of the respondents. The respondents were selected randomly.

### **3.2 CHATBOT CREATED.**

The following languages and tools are used to build our web application for our proposed system

- HTML 5
- PHP

- BOOTSTRAP 04
- AJEX.
- Wamp Server
- Sublime Text Editor
- MySQL
- Arduino IDE

### 3.3 Evaluation Questionnaire

A questionnaire was made of the following questions:

1. Chatbot Messenger chat is very helpful when people are alone?
2. Chatbot Messenger chat can reduce stress?
3. Chatbot messenger are very essential for routine life issues?
4. Chat can help to reduce boredom?
5. Do you accept this kind of social support?

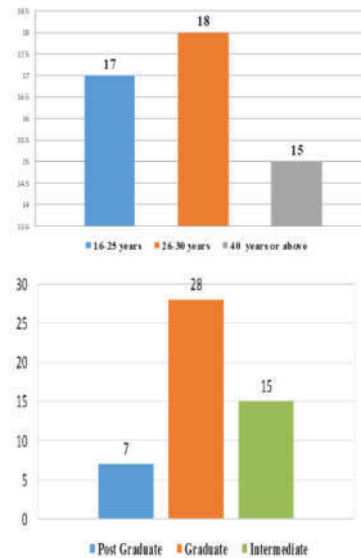
## 4. RESULTS & DISCUSSION

The experimental study consists of pre-test questionnaires, actual tasks, and post-test questionnaires. Usability Evaluation Method Adjective rating scale and Letter grade scale were measured during the experimental study. Then satisfaction was measured just after completing experimental questionnaire feedback through the System Usability Scale by getting the opinions from the participants.

### 4.1 Demographic Results (Pre-test questionnaire)

The pre-test questionnaire was conducted from an employee of the school education and literacy department from the district Jamshoro Tehsil Sehwan city Bhan Sayedabad. A total of 50 people participated in the pre-test questionnaire: 39 male and 11 female.

### The Age Group & Education Level of the Participants



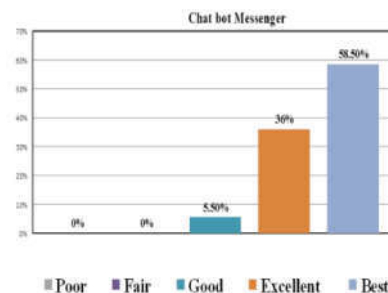
### 4.2 Overall SUS Score.

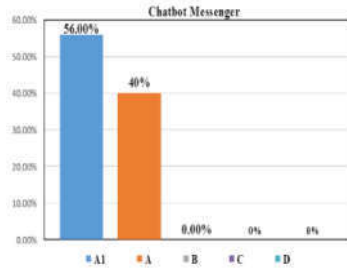
The Score shows that participants are more satisfied.

### 4.3 System Usability Scale Liker Scale Score

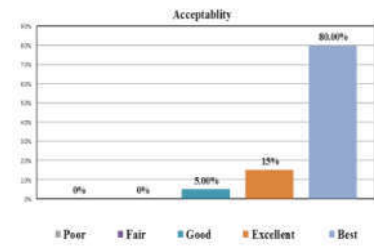
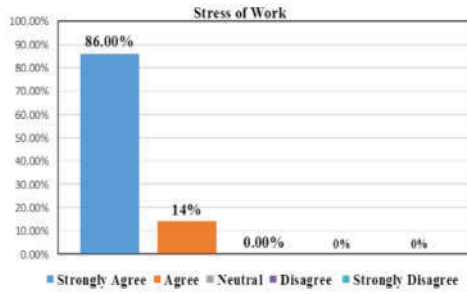
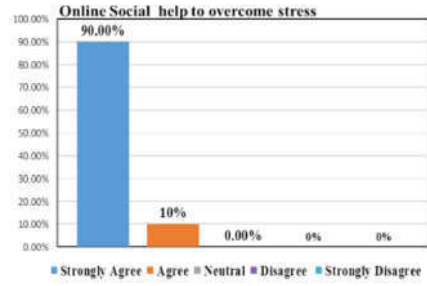
The figure 4.17 shows the male and female total score obtained through SUS according to the survey, the male score is 71 and female score is 67.

### Result of Adjective Rating Scale & Letter Grade Scale

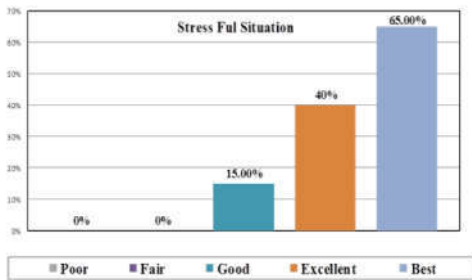
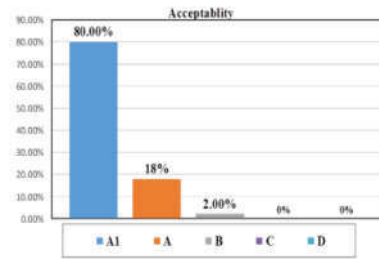




**SUS Liker Scale Score Of Finding Stress**

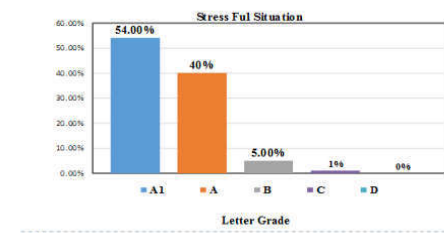
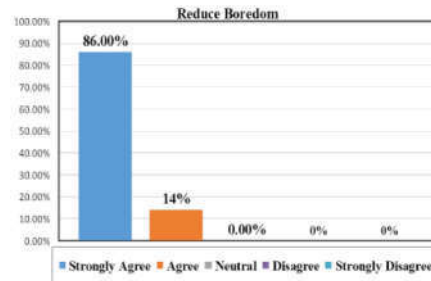


**Adjective Rating Scale & Letter Grade Scale**



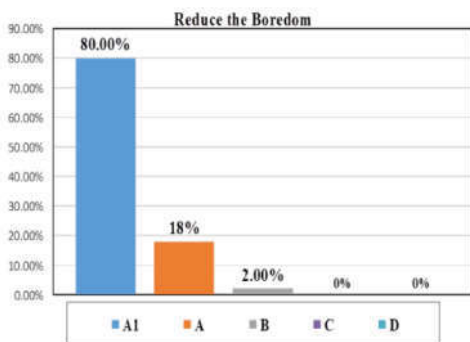
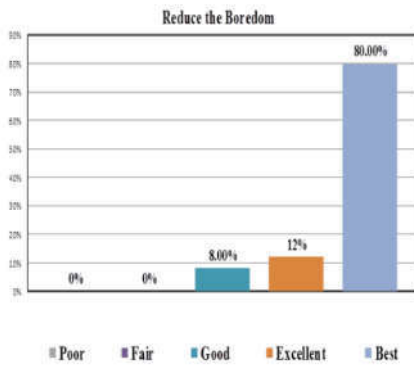
**Liker Scale Score Of Reduce Boredom**

**Letter Grade**



**Adjective Rating Scale & Letter Grade Scale Of Reduce Boredom**

**The Findings Acceptability Adjective Rating Scale & Letter Grade Scale Of Acceptability**



## 5. CONCLUSION

The testing acceptability of online social agent in the Pakistani community was evaluated with SUS Questionnaire along with Adjective Rating Scale and Letter Grade was used. The research was based on experimental analysis, the main objective of this research to evaluate the acceptability of online social agent in our Pakistani society, to reduce the stress of routine life through an online social network (Chatbot Messenger Chat). In order to evaluation of acceptability, the pilot study was conduct and feedback obtained from the questionnaire from the 50 participant employee of the school's education department. The result showed According to SUS the results of our usability test containing SUS Score along with Adjective Rating Scale and Letter Grade: overall using online Social Network support overall score is 59.35, Adjective Rating Scale and Letter Grade: (Male/ Female) SUS Male score is 71 and SUS Female score is 67.35, Adjective Rating Scale and Letter Grade People of Pakistan acceptability of this support is” Best” and A-Grade , Online social network support helpful when<sup>170</sup> people are alone” Best” and “

A1Grade“Online social network support can reduce the stress of routine life “Best”and“AIGrade”Online social network support boredom can be reduce “Best “ and ” A Grade”.

## 5.1 FUTURE WORKS

- We will explore further using more pilot study through more mobile applications.
- We will conduct the same Usability Test in another context with other users.
- A new version of the social support may be up high scoring.

## REFERENCES

- [1] Lenin Medeiros(B) and Tibor Bosse - Conference on Computational Collective 2017 Springer “Testing the Acceptability of Social Support Agents in Online Communities. Behavioural Informatics Group, Vrije Universiteit Amsterdam, De Boelelaan.
- [2] L Medeiros, T Bosse International Conference on Social Informatics, 2016 – Springer“Empirical analysis of social support provided via social media.”
- [3] L Medeiros, R Sikkes, J Treur - International Conference on Computational 2016 – Springer “Modelling a mutual support network for coping with stress “.
- [4] J Hill, WR Ford, IG Farreras 2015 Elsevier Computers in Human Behaviour, “Real conversations with artificial intelligence A comparison between human-human online conversations and human–chatbot conversations”.
- [5] SA Abdul-Kader, JC Woods - International Journal of 2015 “Survey on Chatbot Design Techniques in Speech Conversation Systems”.
- [6] W Van Breda, J Treur, A Van Wissen A. International Conference on Social 2012 - Springer“ Analysis and support of lifestyle via emotions using social media” In: Aberer, K., Flache, A., Jager, W., Liu, L., Tang, J., Gueret,C. (eds.) SocInfo 2012. LNCS, vol. 7710, pp. 275–291. Springer,

- Heidelberg (2012).doi:10.1007/978-3-642-35386-4 21.
- [7] John Brooke, “<https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html>”, last accessed on 14-7-2018.
- [8] Sanchez, and Jeffrey FisherFlorida International University “The Role of Social Support in the Process of Work Stress: A Meta-Analysis”.
- [9] TY Chung, CY Yang, MC Chen - European Journal of Economics 2014 Online social support perceived by Facebook users and its effects on stress coping”
- [10] CMK Cheung, PY Chiu, MKO Lee - Computers in Human Behavior, 2011 – Elsevier “Online social networks: Why do students use facebook?”
- [11] Bayan Abu Shawar, Eric Atwell ” Chatbots: Are they Really Useful? “ Ldv Forum 2007 - jlcl.org.
- [12] Cordula Boden, Jessika Fischer, Kathrin Herbig, Ulrike Spierling FH Erfurt in Conference Paper · December 2006, University of Applied Sciences, Germany “CitizenTalk: Application of Chatbot Infotainment to E-Democracy”.
- [13] ( 2010) Department of Work and Social Psychology, Maastricht University, The Netherlands Rik Crutzen, Ph.D.a,\*, Gjalit-Jorn Y. Peters, Ph.D.b, Sarah Dias Portugal, M.Sc.b “An Artificially Intelligent Chat Agent That Answers Adolescents’ Questions Related to Sex, Drugs, and Alcohol: An Exploratory Study”.
- [14] Jiyou Jia Institute for the Interdisciplinary Informatics University of Augsburg Germany “The Study of the Application of a Keywords-based Chatbot System on the Teaching of Foreign Languages”.
- [15] March 2002 W.J. Coetzer and S. Rothmann\*West University. “Occupational stress of employees in an insurance company “.
- [16] in 2008, in IFIP International Federation for Information Processing, Natascha Esau, Lisa Kleinjohann and Bernd Kleinjohann“ Integrating Emotional Competence into Man-171 Machine Collaboration “.
- [17] Nielsen 2012 introduction to Usability 101 introduction-to-usability (last accessed on 3-7-2016),<https://www.nngroup.com/articles/usability->
- [18] Nielsen, (1993), “Usability Engineering”; Morgan Kaufman, USA
- [19] Brooke, J. (1996), “SUS-A quick and dirty usability scale”, Usability evaluation in the industry”, 189(194), 4-7.
- [20] System Usability Scale, <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html> (last accessed on 3-7-2016).
- [21] Sauro, J. (2011),” Measuring usability with the system usability scale (SUS)”.
- [22] 1. Burks, N., Martin, B.: Everyday problems and life change events: Ongoing versus acute sources of stress. *J. Hum. Stress* 11(1), 27–35 (1985).
- [23] Cobb, S.: Social support as a moderator of life stress. *Psychosom. Med.* 38(5), 300–314 (1976).
- [24] O’Dea, B., Campbell, A, Healthy connections: online social networks and their potential for peer support. In: Health Informatics, The Transformative Power of Innovation - Selected Papers from the 19th Australian National Health Informatics Conference, HIC 2011, Brisbane, Australia, 1–4 August 2011, pp. 133–140. IOS Press (2011).
- [25] Quan-Haase, A., Young, A.L.: Uses and gratifications of social media: a comparison of Facebook and instant messaging. *Bull. Sci. Technol. Soc.* 30(5), 350–361 (2010).
- [26] Takahashi, Y., Uchida, C., Miyaki, K., Sakai, M., Shimbo, T., Nakayama, T.: Potential benefits and harms of a peer support social network service on the internet for people with depressive tendencies: qualitative content analysis and social network analysis. *J. Med. Internet Res.* 11(3) (2009).
- [27] Abdalla, I. A. (1991). Social support and gender responses to job stress in Arab culture. *Journal of Social Behavior and Personality*, 6, 273–288.

- [28] Abdul-Halim, A. A. (1982). Social support and managerial affective responses to job stress. *Journal of Occupational Behavior*, 3, 281–295.
- [29] Anderson, J. G. (1991). Stress and burnout among nurses: A social network approach. *Journal of Social Behavior and Personality*, 6, 251–272.
- [30] Beehr, T. A., King, L. A., & King, D. W. (1990). Social support and occupational stress: Talking to supervisors. *Journal of Vocational Behavior*, 36, 61–81.
- [31] Dignam, J. T., Barrera, M., Jr., & West, S. G. (1986). Occupational stress, social support, and burnout among correctional officers. *American Journal of Community Psychology*, 14, 177–193.
- [32] Wilks, Y. & Catizone, R.: *Human-Computer Conversation*. Encyclopedia of Microcomputers. Dekker, New York. (2000) .