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ORIGINAL

Mediating Effect of Social Capital on Whatsapp Conversations to Promote Students' Mental Health

Efecto mediador del capital social en las conversaciones de Whatsapp para promover la salud mental de los estudiantes

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ABSTRACT

WhatsApp Messenger (WM) discussions, social capital like bonding and bridging plays a critical role in promoting social support and integration among students and improving their mental health. The aim of the research is to examine the mediating roles of Social Confluence (SC) and Social Unity (SU) in the relationship between WM use and student mental health. Data were collected from 300 college students. To learn more about students' use of WM, socialization, SU and SC, and their mental health, the researchers used survey responses. To ascertain the correlations among variables, the questionnaire answers were analysed using the relevant statistical methods. Research's findings showed that students' mental health was positively impacted by their use of WM. Additionally, the mediated impact of SU among WM use and student mental health was greatly impacted by socialization. The mediation impact of SC in the association among WM use and student mental health was not significantly impacted by socialization. Students' health improves with more WM time, according to the data. Socialization bonding social capital mediates the WM mental health connection. These findings illuminate the relationship between WM use and student health, social capital, and inclusion. Presented are these results' ramifications and additional research.

Keywords: Social Media; Mental Health (MH); Social Unity (SU); Social Confluence (SC); WhatsApp Messenger (WM).

RESUMEN

En las conversaciones de WhatsApp Messenger (WM), el capital social, como la vinculación y el puente, desempeña un papel fundamental en la promoción del apoyo social y la integración entre los estudiantes y en la mejora de su salud mental. El objetivo de la investigación es examinar los papeles mediadores de la Confluencia Social (CS) y la Unidad Social (SU) en la relación entre el uso de WM y la salud mental de los estudiantes. Se recogieron datos de 300 estudiantes universitarios. Para obtener más información sobre el uso que hacen los estudiantes de la WM, la socialización, la SU y la SC, y su salud mental, los investigadores utilizaron respuestas a encuestas. Para determinar las correlaciones entre las variables, se analizaron las respuestas del cuestionario utilizando los métodos estadísticos pertinentes. Los resultados de la investigación

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mostraron que la salud mental de los estudiantes se veía afectada positivamente por el uso de la gestión del tiempo. Además, el impacto mediador de la SU entre el uso de la WM y la salud mental de los estudiantes se vio muy afectado por la socialización. El impacto de la mediación de la SC en la asociación entre el uso de la WM y la salud mental de los estudiantes no se vio afectado significativamente por la socialización. Según los datos, la salud de los estudiantes mejora cuanto más tiempo dedican a la gestión del tiempo. El capital social de la socialización media en la conexión entre la salud mental y el uso de la memoria corporal. Estos resultados arrojan luz sobre la relación entre el uso de la gestión del tiempo y la salud, el capital social y la inclusión de los alumnos. Se presentan las ramificaciones de estos resultados y otras investigaciones.

Palabras clave: Medios Sociales; Salud Mental (SM); Unidad Social (SU); Confluencia Social (CS); WhatsApp Messenger (WM).

INTRODUCTION

The rapid growth of websites for social networking has changed people's online behaviour and interactions with others in the present climate of oversaturated media on the internet. The use of online platforms has made it possible for individuals quickly create accounts, make friends in real life, and engage in electronic conversations by sending, publishing, and leaving comments on various pieces of data.[1] Social media programs are presently used in a number of methods by users from various cultural, social, and geographic locations to suit various preferences. Younger people's usage of social media has a variety of mental and social ramifications, such as improving their contentment with college life and preserving social connections. However, excessive usage of social media can have unfavourable effects as well, including tension, tiredness, and data overflow.[2] The reality that social media platforms are fast gaining recognition, playing a significant role in our daily lives, and starting to play a role in learning, despite their pros and cons, remains unaffected. Over the last ten years, mobile-based social media platforms known as apps for instant messaging have gained popularity, particularly among young adults. Even though there are several smartphone apps for instant messaging, WM remains one of the more widely used ones, particularly among students in college. WM offers numerous functions that make it simple for individuals to communicate text, photographs, and clips to their friends as well as call one another using the software. The number of people using WM is growing, from more than 800 million active users in May 2016 to 1 billion in February 2019 and more than 2 billion in February 2020.[3]

By preserving various features of this software, which may boost educational possibilities and the learners' excitement for studying interactions among learners across personal, academic, and curriculum-related regions and foster a sense of community, it is possible to assess the efficiency of various messaging apps in learning. The quick development of devices in recent years has fundamentally changed how people connect and communicate with one another. WM, mobile messaging software used by millions of people worldwide, is one notable network that has garnered significant appeal for purposes of communication. Researchers and professionals are starting to look into WA's ability to improve Mental Health and mental health, especially among college students, as its use keeps growing.[4] A fundamental component of good overall Mental Health is also essential for achieving academic achievement and growing personally. Students at colleges frequently deal with a variety of stressors, such as academic expectations, social difficulties, and transitioning phases, which can have a serious negative influence on their mental health. Researchers are looking into the possibilities for communication tools like WM to offer an accepting setting for pupils with Mental disorders since recognize the significance of treating these concerns.[5] To understand how WM usage affects the mental health of learners via social influence, research looks at the moderating impact of integrating into society. This research expands on earlier studies in this area by showing how modern social networking tools might improve students' mental health and how social influence can play a more important intermediate function in educational environments (figure 1).

To examine how the perception of social support and the use of social media as a mediator relate to social influence and mental health. Based on the social capital hypothesis, which emphasizes social support and human connection to enhance mental health, their research examines the relationship between these two factors.[6] The relationships between reported social influence and mental health aspects among Chinese foreign learners studying in German and their level of WeChat use.[7] To determine whether isolation and awkwardness were mediators of the link between Facebook addiction and personal happiness.[8] Looked into how new nurses in the Western Cape, South Africa, may get assistance through a WM group of practice during their initial year of employment.[9] The impact that social networking sites (SNS) have, particularly on individuals enrolled in medical schools.[10]

Aimed to analyze how the extent to of university students' use of Instagram reduces the association across healthcare Proficiency and digital social influence and to address how Instagram can be used as a socially conscious tool for the avoidance of chronic illnesses among students in college.[11]

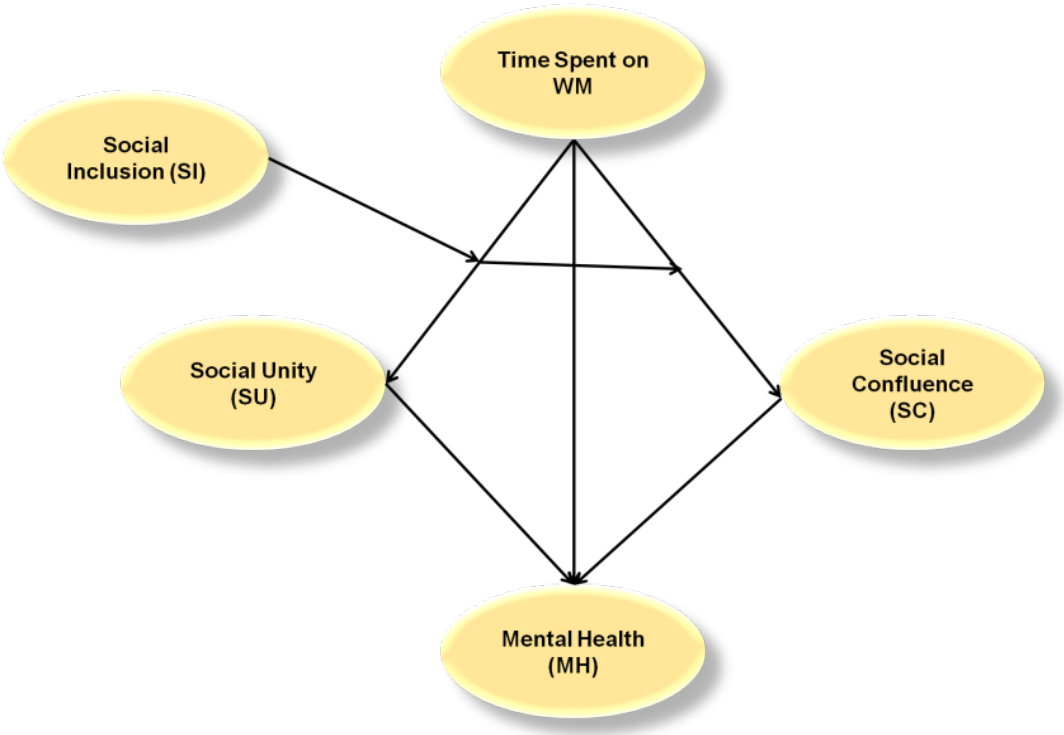

Figure 1. Conceptual Model

To investigate the influence that the usage of instant messaging services has on the environment of Spanish universities, as well as the good and bad effects that their influence has on the actions of individuals.[12] In order to accomplish, it focused our attention on the program that is the most widely used in the region in query, which is WM, and how college students make use of it. Tested the hypothesis that utilizing social media platforms has a detrimental impact on academic achievement, emotional wellness, and mental wellness.[13] Investigated the use of mobile information management (MIM) to involve recent graduates in mobile educational groups as were making their way from college to the workforce.[14] Research aims to investigate the connection among social influence and MH through apparent support from others while examining the usage of social networking sites as a possible moderator in the process. Specifically, their investigation will focus on how peer support is affected by social networking sites. The concept of social wealth, which is focused on interaction with others through social support to enhance one's mental health, serves as the foundation for their research. To investigate the extent to which young people's views of hazardous online and Smartphone usage have changed over the course of the research's time span (2006–2017).[15]

Hypothesis Development

Hypothesis 1 (HP1): the amount of time students spend on WM is favourably related to SC.

Hypothesis 2 (HP2): the association among students' use of WM and their mental health is mediated by SC.

Hypothesis 3 (HP3): the amount of time individuals spend on WM is expected to improve their mental health.

Hypothesis 4 (HP4): the relationship between WM use and SU is moderated by the students' growing socialization.

Hypothesis 5 (HP5): the amount of time students spends using WM had a favourable relationship with SU.

Hypothesis 6 (HP6): the relationship between students' use of WM and their mental health is mediated by SU.

Hypothesis 7 (HP7): the relationship between WM use and SC is moderated by the students' growing socialization.

Hypothesis 8 (HP8): the level of socialization that students have attained influences the connection in HP5 in such a way that strengthening the beneficial connection will also enhance socialization, and inversely.

Hypothesis 9 (HP9): the level of socialization that students have attained influences the connection in HP3 in such a way that strengthening the connection will increase as socialization does, and inversely.

METHOD

This section outlines the methodological framework of the research, detailing the strategies used to measure key variables, including time spent on WhatsApp Messenger (WM), social inclusion (SI), social capital (SC), social unity (SU), and student mental health (MH). Each variable was assessed using validated scales with high

reliability coefficients. Additionally, the sample collection process is described, focusing on a questionnaire survey conducted. The demographic characteristics of participants are presented, highlighting the diverse cultural and ethnic backgrounds of the student population, which provides context for the research findings.

Strategies

- Social Inclusion (SI): The measure was modified to better represent responses from individuals because the original scale was intended to collect responses from everyone. The test item "I feel like the student community is my own" had an instance value of 0,90 on this rating system. A 5-point Likert scale on a rating of 1 (strongly agree) to 5 (strongly disagree) was used.
- Time Spent on WA: This scale includes individual evaluations of WM behavior with the aim of gauging how much usage of WM is engaged in, such as daily usage time. "I feel out of touch when I haven't logged onto WM for a while" was the selected question on this rating system (α = 0,93). The survey additionally includes a number of Likert scale mentality queries designed to probe respondents' feelings related to WM and the extent to which they use it in everyday situations.
- SC and SU: "Interacting with people at college/university makes me want to try new things" was an instance of an item on this rating scale for SI, and its score was 0,91. Similar to this, "There are a few individuals at college/university, I believe with solving my problems" was the chosen question for SU (α = 0,94). A five-point Likert scale was used to score the answers.
- Mental Health (MH) of Students: "The requirements for my life at the college/university are excellent" was the selected response on this rating system (α = 0,93). On a Likert scale, with 1 being the strongest disagreement and 5 being the strongest agreement, each item was scored.

Collections of Samples and Data

A questionnaire survey was carried out in the autumn of 2020 at three colleges to achieve the objectives of this research. The town's numerous unique cultural and ethnic groups are reflected in physical diversity and religious diversity. Demographic data are displayed in table 1.

Table 1. Demographics Data

	Participants	**%**
Total Participants	300	100
Gender		
Male	183	61
Female	117	39
Age Range		
16 to 21 years	216	72
Other age ranges	84	28
Education		
Graduates	162	54
Others	138	46
Years of WM Use		
3 to 4 years	192	64
Other durations	108	36

Analysis of Data

Validity and reliability testing

The framework and confirmatory factor analysis (CFA) were examined using AMOS 24.0 application. To determine whether the indicator displays a load of factors above 0,4, exploratory factor analysis (EFA) was performed using the SPSS application. There is no reliability problem because the calculated value (figures 2 (a) & 2 (b)) is within the acceptable capacity cut-off range (between 0,594 and 0,909). Because every value is higher than the advised level, there are no cross-loading difficulties. The convergence accuracy was assessed by assessing the variable transferring numbers, composite reliability (CR), and average variance extracted (AVE). Additionally, CR and AVE were employed to evaluate the reliability and validity of the information. The CR and AVE scores ought to be at least 0,71 and 0,6, correspondingly. According to figures 2 (a) & (b), the value of the CR is in the variety of 0,90 and 0,94, and the rate of the AVE is in the range of 0,52 and 0,75. Outcomes are greater than the suggested values, showing that the indicators were efficient. By evaluating the relationship

between the concepts to the AVE squared for every build, the discriminate reliability of the evaluation model is assessed. Table 2 demonstrates every construct's AVE squared is bigger than the correlation of all inter-constructs. As a result, every scale's discriminate reliability was proven.

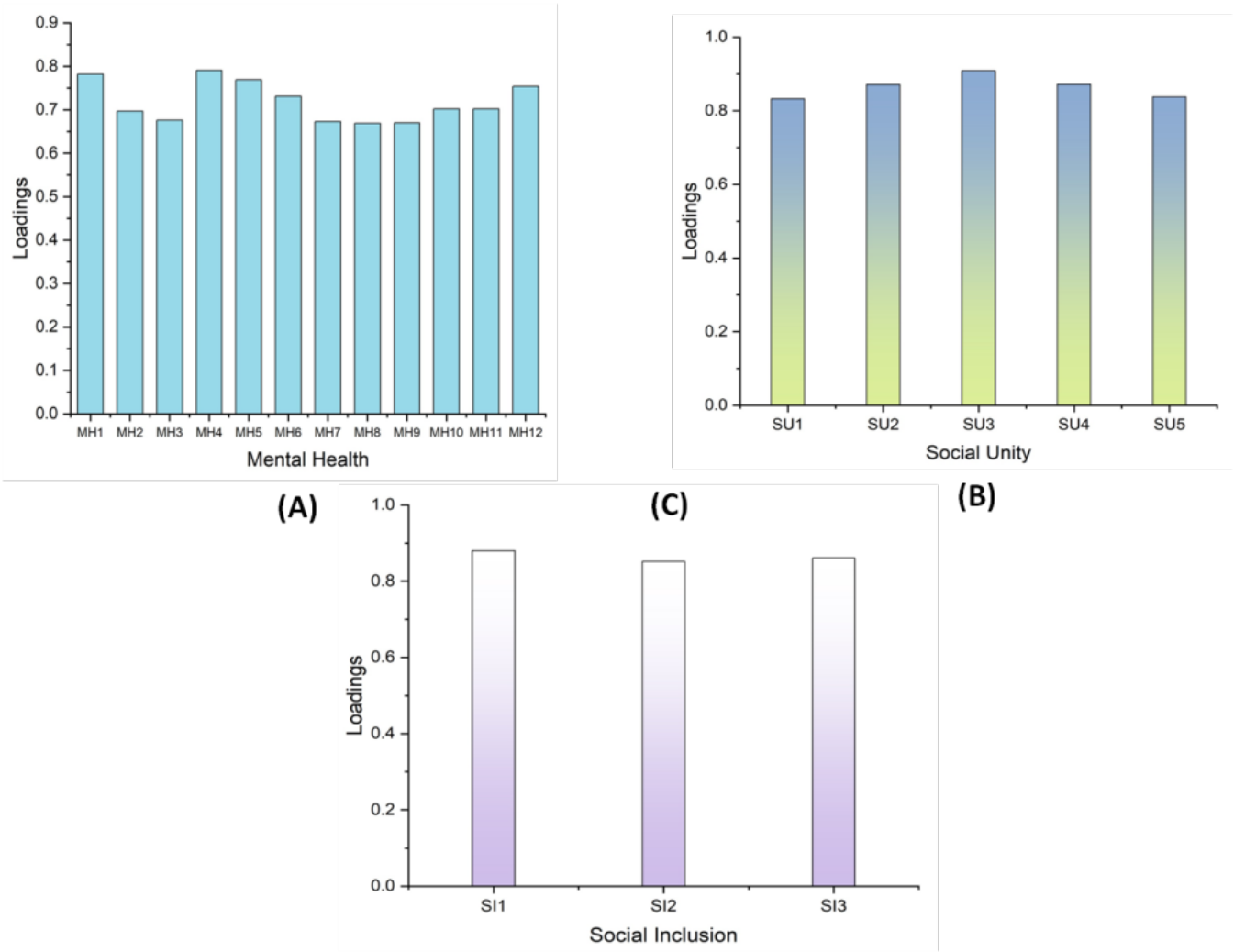

Figure 2. Reliability testing (a). Mental Health (MH), Social Unity (SU), and Social Inclusion (SI)

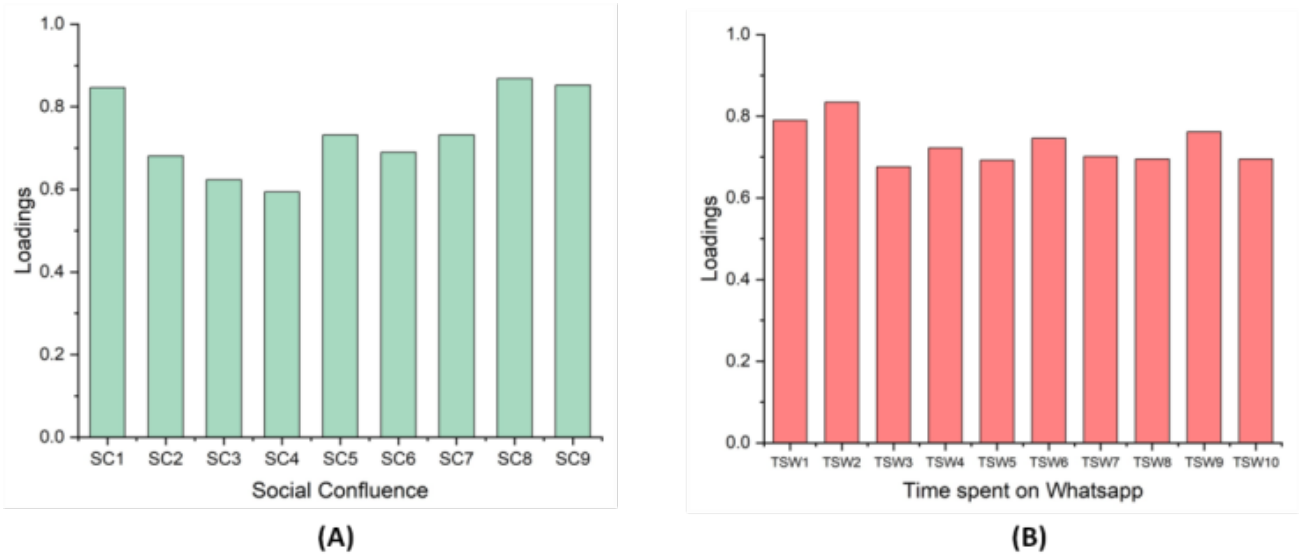

Figure 3. (b). Social Confluence (SC) and Time spent on WM (TSW)

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Table 2. AVE Square root, descriptive statistics, and connection matrices

Construct	SU	MH	SC	TSW	SI
M	3,48	3,63	3,57	3,50	3,43
SD	0,90	0,86	0,96	0,82	1,13
SU	(0,87)	0,43	0,49	0,33	0,55
MH		(0,73)	0,17	0,54	0,57
SC			(0,75)	0,05	0,19
TSW				(0,74)	0,43
SI					(0,87)

Architectural models

The architectural model was evaluated using the information gathered by the approved measurements. AMOS was used to determine the suggested model's general fitting score. The calculated value falls within the acceptable range. Table 3 demonstrates that the standardized root mean residual (SRMR) is 0,047 and the root mean square error of approximation (RMSEA) is 0,042, both of which are less than the suggested value of 0,11. Additionally, the "degree of freedom (df)" which is 1,445, is inside reasonable restrictions. Additionally, the IFI, TLI, and CFI values are all higher than the suggested 0,91 estimations at 0,953, 0,951, and 0,954, respectively. Additionally, it is assumed that respondents to the questionnaire responded to each item at another point in time. The prevalent technique bias is not a significant problem. The route evaluation was developed in order to evaluate the assumptions because the approach fits the data well.

Table 3. The general model fit

Fit indices	Model Value	Acceptable value	Model fit
3 /df	1,445	1 < 3 /df< 4	✓
ML (2)	999,142	Better smaller	-
RMSEA	0,043	Less than 0,09	✓
TLI (NNFI)	0,951	Greater than 0,8	✓
CFI	0,954	Greater than 0,98	✓
IFI	0,953	Greater than 0,8	✓
SRMR	0,048	Less than0,09	✓
Degrees of freedom (df)	693	Better Bigger	-

Testing of Hypothesis

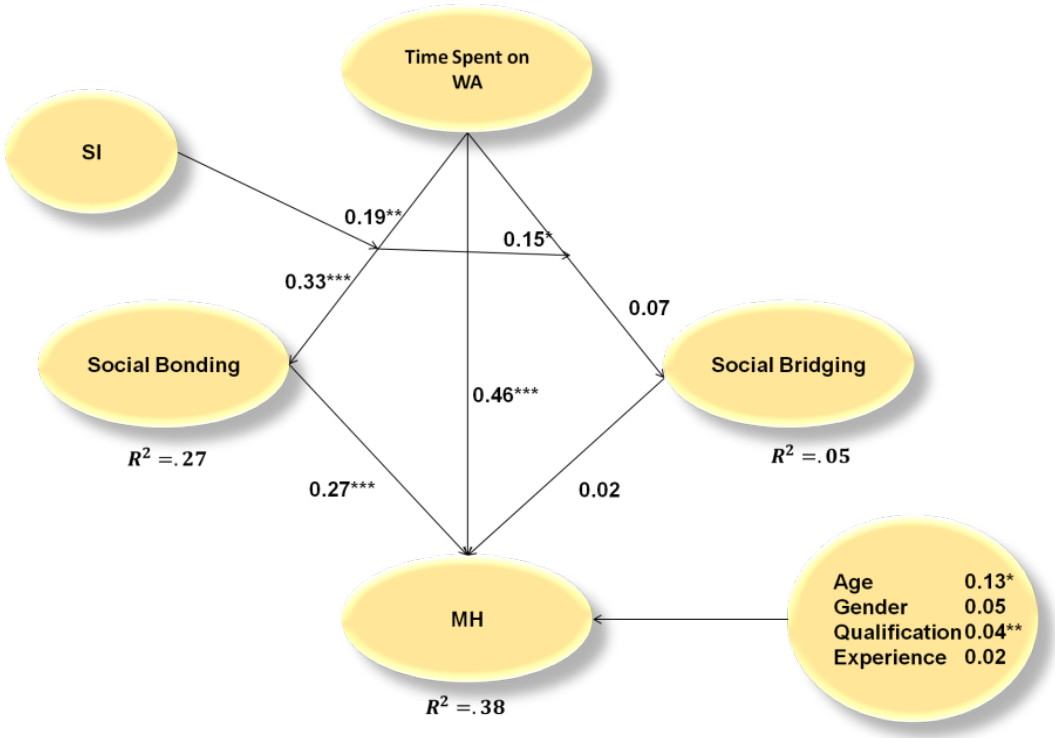

Figure 4. Outcomes of the path assessment

In light of the trajectory evaluation findings, which show a substantial positive link between WM use and students' Mental health (HP1: ß = 0,46, p < 0,001), HP1 is approved. Additionally, there is a positive but insignificant connection between using WM and SC (HP4: ß = 0,07, p > 0,05) and a significant positive correlation between WM use with SU (HP2: ß = 0,33, p 0,001). As a result, HP2 is accepted, while HP3 is denied.HP1 is accepted (HP1: ß = 0,46, p < 0,001) for the reason stated.

Similarly, the connection between WM use and socialization was used to assess the influence of social inclusion in the link between WM use and SU and SC. Scores for WM use and socialization were computed prior to creating the connection term z, and the parameter contact term was formed by multiplying the z value. The findings (figure 3) showed that the moderating impact of socialization on the relationship between WM use and SC (HP7: ß = 0,19, p < 0,01) and SU (HP6: ß = 0,15, p < 0,05), respectively, were substantial and supported HP6 and HP7. According to the connection pattern in figure 4, there is a greater correlation between WM use and SU when socialization is greater (ß = 0,36), as opposed to when it is smaller (ß = 0,13); likewise, figure 4 showed that there is a more powerful connection among WM use and bridging social capital when socialization is greater (ß = 0,47), and a less strong connection among WM use and bridging social capital when socialization is lower (ß = 0,17).

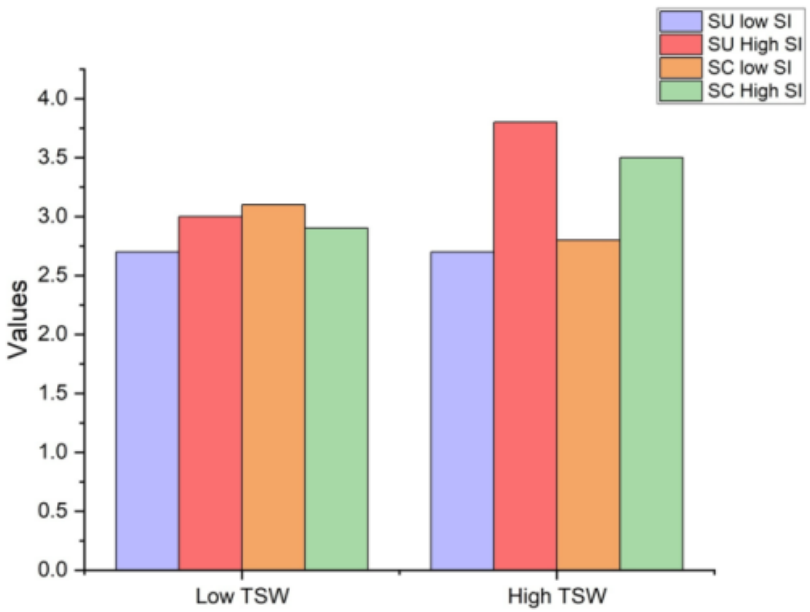

Figure 5. TSW and SI connection graph

Test of mediator using the bootstrapping approach

Using the bootstrapping technique, a mediator was examined. The research generated a bootstrap of 96 % confidence intervals (CIs) based on 6 000 bootstrapping data to determine the indirect impacts among dependence and results variables. According to statistics, CIs have significance if the value of the smaller (SCIs) and greater confidence intervals (GCIs) excludes 0. The findings indicate (table 4) that SU strongly mediators the association between students' mental health and WM use. Because neither CI contains zero, this finding supports the hypothesis (HP4). The association between WM use and student mental health is barely mediated by SC, refuting hypothesis HP5.

Table 4. Outcomes of the bootstrap analysis for mediator interactions

Indirect effect bootstraps	Impacts	SE Boot	Minimum 96 % CI	Maximum 96 % CI
SC	0,002	0,002	-0,0107	0,0302
SU	0,092	0,033	0,0313	0,1610

The framework shows that the mental health of students accounts for 38 % of the variation, 27 % of the variation is connected to SU, and 5 % is associated with SC. Student mental health and all other control factors were not important, and the only controlling factor with a meaningful influence was age. Thus, research draw the conclusion that the model suggested is plausible (figure 2).

Modest mediator

Model 8 of the SPSS process macros, which is suggested to evaluate these types of controlled a mediator, was used to test moderated negotiation. Table 5 displays the bootstrapping CIs for indirect effects with SU for socialization values that are one SD above average, average, and one SD below mean. As a result, the result was 0. An important facilitating indirect impact of WM use on student mental health via SU was noticed, supporting HP8. The socialization values are also one SD below average, average, and one SD below average, indicating a negligible facilitating inadvertent impact that WM use on student mental health via SC contains zero and denying HP9.

Table 5. Outcomes of the moderated negotiation test in regress

SI on SU	Indirect impacts	SE Boot	Minimum 96 % CI	Maximum 96 % CI
−1 (<)	0,030	0,029	-0,0145	0,1049
Average	0,061	0,025	0,0208	0,1202
+1 (>)	0,092	0,041	0,0307	0,9102
SI on SC				
−1 (<)	-0,012	0,018	-0,0667	0,0048
Average	0,007	0,012	-0,0078	0,0403
+1 (>)	0,024	0,025	-0,0057	0,0939

CONCLUSIONS

Research set out to discover a response to the question: Can the amount of time individuals spend using WM improve their social network, which in turn improves their mental health. The results of this research showed that using WM can improve students' mental health through bonding assets and elevated levels of socialization. These results are in great agreement with earlier research. Concentrating on WM usage can therefore help with understanding the fundamental concepts behind this link while contributing to the scholarly discussion on the possible effects of contemporary personal life quality social media in a new setting.

Using social networks, this research focused on WM usage to see how it affected the mental health of students. Additionally, it looked into the moderating role that socialization plays in enhancing WM's beneficial effects on social capital and student mental health. This research did not give outcomes about gender-based information or individually assess males and females. Future studies, however, can divide participants into groups based on gender to see whether there are any dissimilarity among females and males, and they can report their findings accordingly.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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