


THE IMPACT OF TIKTOK ON EMPLOYEES' ATTENTION SPAN

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ARTICLE INFO	<u>ABSTRACT</u>
<p>Article history: Received: Dec, 3rd 2023 Accepted: Oct, 11th 2024</p>	<p>Purpose: Most studies on the implications of social media are conducted prior to the pandemic, and either pursue a holistic approach to the effect of social media or focus on the effect of well-established platforms such as Facebook. This study investigates the impact of TikTok use on employees' cognitive functions, specifically their attention span. The study also investigates the relationship between post-pandemic escalated use of social media and employees' attention span.</p>
<p>Keywords: Social Media; TikTok; Employees; Attention Span; Digital Health; Cognitive Functions.</p>	<p>Methodology: Utilizing a quantitative methodological approach, this study collected data from 211 TikTok users to test for three hypotheses: the negative effect of time spent on TikTok on attention span, the negative effect of emotional connection to TikTok use on attention span, and the negative effect of time spent on social media on attention span. Data was collected using questionnaires and the hypotheses were tested using SPSS software for statistical analysis.</p>
	<p>Findings: The study provides empirical evidence on the impact of social media and TikTok use on decreased attention span. Findings highlight this negative relationship being an outcome of time spent on the platform as well as the emotional connection to this use.</p> <p>Practical & Social Implications: Findings are of practical implication for employees and the general society in recognizing the impact of TikTok and other social media platforms on their cognitive functions. Findings also provide empirical evidence to organizations for understanding factors influencing their members' performance.</p> <p>Originality/Value: This study contributes to extant literature in two ways: First, it enriches our understanding of the implications of recent patterns of social media use and fast-paced content for cognitive functions. Second, this research contributes to the wider discourse on the implications of information and communication technologies (ICTs) for the workplace, highlighting the negative effect on employees' attention span, and potentially their performance.</p> <p>Doi: https://doi.org/10.26668/businessreview/2024.v9i11.5144</p>

O IMPACTO DO TIKTOK NA CAPACIDADE DE ATENÇÃO DOS FUNCIONÁRIOS

RESUMO

Objetivo: A maioria dos estudos sobre as implicações da mídia social é realizada antes da pandemia e busca uma abordagem holística do efeito da mídia social ou se concentra no efeito de plataformas bem estabelecidas, como o Facebook. Este estudo investiga o impacto do uso do TikTok nas funções cognitivas dos funcionários, especificamente em sua capacidade de atenção. O estudo também investiga a relação entre o uso intensificado de mídias sociais pós-pandemia e a capacidade de atenção dos funcionários.

Metodologia: Utilizando uma abordagem metodológica quantitativa, este estudo coletou dados de 211 usuários do TikTok para testar três hipóteses: o efeito negativo do tempo gasto no TikTok sobre a capacidade de atenção, o efeito negativo da conexão emocional com o uso do TikTok sobre a capacidade de atenção e o efeito negativo

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do tempo gasto nas mídias sociais sobre a capacidade de atenção. Os dados foram coletados por meio de questionários e as hipóteses foram testadas usando o software SPSS para análise estatística.

Conclusões: O estudo fornece evidências empíricas sobre o impacto da mídia social e do uso do TikTok na diminuição da capacidade de atenção. Os resultados destacam que essa relação negativa é resultado do tempo gasto na plataforma, bem como da conexão emocional com esse uso.

Implicações Práticas e Sociais: As descobertas têm implicações práticas para os funcionários e para a sociedade em geral no reconhecimento do impacto do TikTok e de outras plataformas de mídia social em suas funções cognitivas. Os resultados também fornecem evidências empíricas para que as organizações compreendam os fatores que influenciam o desempenho de seus membros.

Originalidade/Valor: Este estudo contribui para a literatura existente de duas maneiras: Primeiro, ele enriquece nossa compreensão das implicações dos recentes padrões de uso da mídia social e do conteúdo de ritmo acelerado para as funções cognitivas. Em segundo lugar, esta pesquisa contribui para o discurso mais amplo sobre as implicações das tecnologias de informação e comunicação (TICs) no local de trabalho, destacando o efeito negativo sobre a capacidade de atenção dos funcionários e, possivelmente, sobre seu desempenho.

Palavras-chave: Mídia Social, TikTok, Funcionários, Capacidade de Atenção, Saúde Digital, Funções Cognitivas.

EL IMPACTO DE TIKTOK EN LA CAPACIDAD DE ATENCIÓN DE LOS EMPLEADOS

RESUMEN

Propósito: La mayoría de los estudios sobre las implicaciones de los medios sociales se realizan antes de la pandemia y, o bien siguen un enfoque holístico del efecto de los medios sociales, o bien se centran en el efecto de plataformas bien establecidas como Facebook. Este estudio investiga el impacto del uso de TikTok en las funciones cognitivas de los empleados, concretamente en su capacidad de atención. El estudio también investiga la relación entre la escalada pospandémica del uso de los medios sociales y la capacidad de atención de los empleados.

Metodología: Utilizando un enfoque metodológico cuantitativo, este estudio recopiló datos de 211 usuarios de TikTok para probar tres hipótesis: el efecto negativo del tiempo dedicado a TikTok en la capacidad de atención, el efecto negativo de la conexión emocional con el uso de TikTok en la capacidad de atención y el efecto negativo del tiempo dedicado a los medios sociales en la capacidad de atención. Los datos se recogieron mediante cuestionarios y las hipótesis se probaron utilizando el software SPSS para el análisis estadístico.

Resultados: El estudio aporta pruebas empíricas sobre el impacto del uso de las redes sociales y TikTok en la disminución de la capacidad de atención. Los resultados ponen de relieve que esta relación negativa es consecuencia del tiempo que se pasa en la plataforma, así como de la conexión emocional con este uso.

Implicaciones Prácticas y Sociales: Los resultados son de implicación práctica para los empleados y la sociedad en general en el reconocimiento del impacto de TikTok y otras plataformas de medios sociales en sus funciones cognitivas. Los resultados también proporcionan evidencia empírica a las organizaciones para comprender los factores que influyen en el rendimiento de sus miembros.

Originalidad/Valor: Este estudio contribuye a la literatura existente de dos maneras: En primer lugar, enriquece nuestra comprensión de las implicaciones de los recientes patrones de uso de los medios sociales y el contenido de ritmo rápido para las funciones cognitivas. En segundo lugar, esta investigación contribuye al discurso más amplio sobre las implicaciones de las tecnologías de la información y la comunicación (TIC) para el lugar de trabajo, destacando el efecto negativo sobre la capacidad de atención de los empleados y, potencialmente, sobre su rendimiento.

Palabras clave: Redes Sociales, TikTok, Empleados, Capacidad de Atención, Salud Digital, Funciones Cognitivas.

1 INTRODUCTION

Everything is rapid nowadays; never in human history has there been such a rush to get going, and this is a result of mobile culture. Never has it been easier to express ideas and debates on social media, which offers online contact between individuals or groups to generate,

distribute, and exchange ideas, photos, and videos (Kies et al., 2018). Social media has transformed communications and interactions, becoming an essential aspect of our everyday lives (Subramanian, 2018). The number of users and enormous daily visits to social media sites are increasing exponentially (Kies et al., 2018). Excessive use of social media may result in unforeseen consequences, such as diminishing attention span. Attention span is the length of time during which a person is able to maintain his concentration on a task or activity, as people hop from one message to another or speak to multiple individuals simultaneously (Kies et al., 2018). According to Czerwinski et al. (2000), workers who engage in such communications tend to respond to disruptions 40% of the time, distracting them from concentrating on the original activity. Resuming the main task after a disruption can take up to 25 minutes (Czerwinski et al., 2000). Attention span is essential for interactions with the mental presence. A study of the available information conducted by Lodge (2019) showed that the association between technologies and attention spans is unclear; research does suggest, however, that multitasking frequently overwhelms the brain's attention centres. According to Hembrooke & Gay (2003), persons who multitask on social media often do not perform well in tasks requiring them to filter out distractions.

Recently, social media users have become increasingly engaged in self-publishing, rendering people to publish several photos/videos on social media containing the latest daily events, such as a new cook, dance, or trend. For that purpose, TikTok is one of the most used applications. TikTok's algorithm has been known for its quick adaptation to what users interact with on their page, attracting users' attention and resulting in emotional connection, i.e., attachment and addiction to the platform. The Technology Acceptance Model (TAM) explains this use by explaining how system design features generate cognitive responses (including perceived ease of use and perceived usefulness), which then lead to a specific response (intention and attitude toward using a technology), influencing use behavior (Davis, 1989). Extensions of TAM also point out to the influence of perceived ease of use and perceived usefulness, in addition to a range of other variables (Marangunic & Granic, 2015; Wang et al., 2022). Most studies on the use of social media are conducted prior to the pandemic, and usually either pursue a holistic approach to the effect of social media, dominantly in Western societies; or focus on the effect of well-established platforms such as Facebook.

TikTok is a significant topic of research for a variety of reasons. It is one of the fastest-growing social media platforms. It was the most downloaded app for 2020 and 2021, with its user base increasing annually (Iqbal, 2021). TikTok attracts its users with a variety of short

videos and also allows them to become content creators as per their interests and hobbies (Putri, 2023). It has thus gained the interest of a vast user base comprising over 1.8 billion users, most of whom are young people under the age of 30 (Iqbal, 2021). TikTok has a big influence on the behavior of its users who often engage and share videos while jumping from one TikTok trend to another (Herrman, 2019). Focusing on TikTok can help us further our understanding of such prevalent and rapidly increasing use and its implications on the social environment and cognitive functions of its users. Therefore, this study seeks to understand the implication of social media, and particularly TikTok, on users' attention span (DV: attention span). The study investigates (1) the impact of time spent on social media (IV: time on social media) on attention span, (2) the impact of time spent on TikTok (IV: time on TikTok) on attention span, and (3) the impact of emotional connection to TikTok use (IV: emotional connection) on attention span.

In what follows, we first offer a background of the theoretical foundation and prior research findings, followed by the construction of research hypotheses and the study model. Then, we describe our research design, and present and discuss the study findings.

2 RESEARCH BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 RESEARCH BACKGROUND

Existent research highlights the role of innovative technology in accelerating communication, travel, and means of transmitting speech and data. Social media's rapid uptake has resulted in a fundamental shift in how people cooperate and communicate. Students use social networking sites at various stages to facilitate their studies, do their homework, and communicate with their teachers and colleagues (Chugh & Ruhi, 2018). Social networking sites have also helped facilitate business and marketing through direct customer communications. Studies also highlight how social media adoption can affect business performance (Rizkalla et al., 2023), and also facilitate the reduction of unemployment as job seekers can find suitable jobs quickly through such platforms (Saiphoo & Vahedi, 2019). Extant literature highlights several implications of social media use. For example, according to Duan (2023), social media has an influential role in developing the spirit of reading among individuals, especially in the electronic aspect.

Concerns about the influence of digital technologies on humans have developed in recent years. An increasing amount of literature compares reading digitally to reading printed

material. Delgado (2018) argues that a disadvantage of reading in a digital setting is screen inferiority, i.e., the idea that digital settings are naturally more distracting. A study examined memory performance variations between students who had a laptop during a lecture and those who did not. Researchers discovered a significant decrease in performance for the group with access to laptops, which they attributed to the group's split student concentration (Hembrooke & Gay, 2003).

It is challenging to concentrate on infinity content to watch and read on social media through handheld cell phones and hyperlinks (Subramanian, 2018). Subramanian (2018) highlights that most young people use their smartphones to alleviate boredom, check their phones every half an hour or less, and also use them simultaneously when watching television. Such connection is becoming increasingly severe as people sleep with their phones. Answering phone calls and text messages in the middle of the night. Such habits can affect their attention and lead to sleep deprivation and poor work performance (Subramanian, 2018).

One of the widely used social media platforms is TikTok. Although TikTok is a relatively new platform, it has been very popular with over 1.7 billion users (Yeung et al., 2022; Iqbal, 2021). This widespread use could be attributed to the media meeting an individual's wants, leading an individual to continue using this digital platform (Ruggiero, 2000). A relevant theory explaining such technology use is the Technology Acceptance Model (TAM) (Davis, 1989). This theory describes that users' acceptance and intention to use a technology are influenced by the ease of use and perceived usefulness of that technology. An extension to this theory focuses on users' tendency to use mobile short video apps (SVA) (Wang et al., 2022), such as TikTok. The SVA-TAM model confirms ease of use and usefulness as factors positively influencing users' acceptance (Wang et al., 2022). The model also suggests additional factors that can also influence users' acceptance of short video apps, including electronic word of mouth (i.e., comments on the short videos), and electronic trust (i.e., users' perception of the content and content creators on the platform) (Wang et al., 2022).

One of the potential implications of social media is on users' attention span. In conceptualizing attention, it can refer to anything that provides clarity to a subject (such as a spotlight or a bright spot) (Mark, 2023). Attention is often viewed as a scarce resource, as suggested by the phrase 'pay' attention. Other terms reflect agency in attention, as people 'direct' or 'focus' their attention (Mark, 2023). However, human agency in controlling attention may not be applicable when using technology. In the digital era, users may lack such agency and 'lose focus' as they spend more time on screens (Mark, 2023).

Despite prior research, the implications of the use of social media, particularly TikTok, are yet to be fully understood. Few scholars address the impact of social media but do not consider relatively new platforms, such as TikTok, and are dominated by studies prior to the pandemic conducted in Western societies. Consequently, we present our hypothesis development below.

2.2 TIME SPENT ON TIKTOK

The more time individuals spend using TikTok, the more likely their performance in completing tasks will be affected. For example, students spending more time on TikTok performed poorly academically (Sha and Dong, 2021). People are more prone to losing track of time when they spend more time on TikTok (Mekler, 2021). TikTok addiction has been connected to stress, anxiety, and tension (Maguire & Pellosmaa, 2020). Social media applications, such as TikTok, may also impact users' memory and learning attitudes, which, if continued, can become a habit (Zahra, 2022). Other research has shown that the notification feature of our phones can act as a distraction, even when not looking at them (Stothart et al., 2015). The proximity of our hand-held mobile phones influences our ability to complete tasks (Thornton et al., 2014). Using a phone simultaneously while working on tasks can be tricky and challenging (Bovonsunthonchai et al., 2020).

Social media companies have developed algorithms to maintain users' attention for extended periods (Montag et al., 2020). Due to prolonged user engagement, social media companies gain considerable knowledge about the psychological characteristics of their users, which can be used for micro-targeting (Matz et al., 2017). Such an attractive platform design can lead to addiction and prolonged periods of use (Sindermann, 2020). Design factors such as Likes, tailored features, and the 'for you' page on TikTok can render quick identification of what users appreciate, contributing to lengthier TikTok use than the user intended (Wang, 2020). As a result of the above argument, the following hypothesis is proposed:

H1: Time spent on TikTok affects the attention span negatively.

2.3 IMPLICATIONS OF SOCIAL MEDIA USE

Greenfield (2015) highlights that digital technologies have harmed our brains for years. Others have expressed similar worries about how time on social media has probable harmful

effects on users' concentration, memory, and social interaction capacity (Carr, 2020; Wolf, 2018). Loh and Kanai (2016) critically analyzed the neuroscience literature data on the impact of such use on users' brains. They conclude that while some neuroscience studies point to brain alterations caused by internet use, the evidence is far from conclusive.

Mark (2023) developed a framework to describe the various forms of attentional experiences in the digital environment. He differentiates different conditions based on two variables: the level of involvement and the degree of difficulty. One of the conditions is that in which people are highly engaged yet unchallenged which he refers to as a 'rote condition'. Rote activities are mechanical, repetitive, and simple activities that can capture the attention. This for example includes playing Candy Crush or scrolling social media for hours. Because rote activities comprise simple tasks, they require fewer cognitive resources. This explains why people may spend many hours on such activities without exhaustion (Mark, 2023). The TAM can also explain this use: Because of perceived ease of use, social media triggers cognitive responses, generating a positive attitude toward utilizing the technology and impacting users' behaviour (Davis, 1989; Marangunic & Granic, 2015; Wang et al., 2022).

However, it is yet unclear whether users leave adequate time to complete or comprehend the content they view as they use social media. Subramanian (2018) claimed that our attention spans had decreased overall, rendering the need for help in focusing on what was in front of us. According to Subramanian (2018), 44% of users reported struggling to focus when performing activities, and 37% needed help to utilize their time to avoid procrastination. An average worker is distracted at least six to eight times daily, resulting in 28% of their working time (Spira & Feintuch, 2006). Further investigation of the relationship between time spent on social media and attention span is needed. Therefore, the following hypothesis is proposed:

H2: Time spent on social media affects attention span negatively.

2.4 EMOTIONAL CONNECTION TO TIKTOK USE

Emotional connection refers to users' perception of the importance of a media platform in their social lives and their connection to its use, rather than merely the frequency of use (Jenkins-Guarnieri et al., 2013). According to Carbonaro (2023), TikTok is the app to use when searching for answers. Where in town can I discover lovely cafes? What is London's best Italian restaurant? What are the current shows in Paris? What is the proper format for a cover letter? What are the interests of business-targeted customers? Carbonaro (2023) highlights that Gen Z

seeks advice from an app that explodes with dance trends and music. The application also allows users to communicate with friends and families by sending and receiving messages and publishing videos and photos (Shao & Lee, 2020). TikTok can be used to find out people's ideas and reviews about a specific product so that they can determine whether to purchase it. TikTok's use as a search engine is, in fact, rapidly increasing, rendering many to wonder if it may eventually threaten the dominance of popular search engines like Google (Carbonaro, 2023). Due to the application's search capabilities, Google points out TikTok as a competitor. Google's senior vice president remarked that approximately 40% of young people use TikTok instead of Google Maps to search for a place to eat for lunch (Grabb, 2023).

TAM and many of its theoretical extensions often shed light on perceived ease of use and usefulness as factors influencing users' attitudes toward a specific technology (Marangunic & Granic, 2015). Perceived ease of use is evident in TikTok which allows users easily make and share 15-second clips (Wang et al., 2022). Perceived usefulness can be witnessed in users' utilization of the application for entertainment, business, education, and other uses. Content is continuously provided as users scroll down (D'Souza, 2023). Consequently, people are likely to use TikTok following content they enjoy. Other users may find TikTok useful for developing skills, such as utilizing it to learn new food recipes (Shao & Lee, 2020).

Such prevalent use and trust of TikTok suggests psychological implications associated with TikTok use. According to SVA-TAM model, this electronic trust can also positively influence users' acceptance of TikTok (Wang et al., 2022). Some users rely on TikTok to acquire information for assurance. For example, many sought a diagnosis after viewing videos about attention-deficit/hyperactivity disorder (ADHD), indicating that the platform's popularity may have increased awareness of the problem (Boseley, 2021). "#adhd" is the platform's ninth most utilized health-related hashtag (Zenone, 2020). The amount of unmoderated, user-generated content online could render incorrect, misleading information and also cause health issues (Suarez & Alvarez, 2021), such as addiction. The implications of such an emotional connection to TikTok use are still unclear. Hence, the following hypothesis is projected:

H3: Emotional connection to TikTok use affects attention span negatively.

3 RESEARCH DESIGN

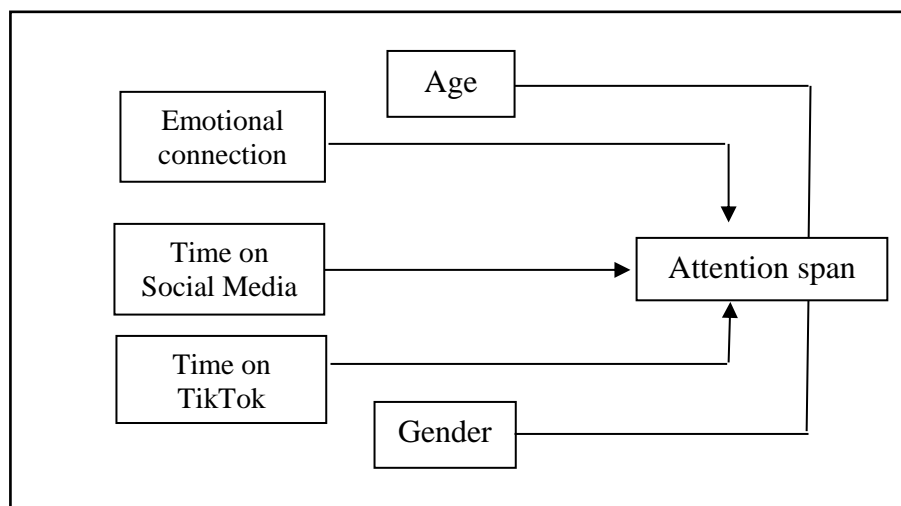
This research followed a quantitative methodology. It collected data through electronic surveys to test three hypotheses and understand the relationship between TikTok and attention

span. The following sections outline details on the research design, such as the research instrument, data collection, participants, and analytical methods.

Nowadays, people of different ages use technology and TikTok. Therefore, our target was TikTok users of different ages. The questionnaire was distributed online using purposive sampling. The questionnaire link was distributed mainly using TikTok platform, in addition to other social media platforms. This facilitated reaching respondents we target, i.e., TikTok users who are currently employed, previously employed, or are potential employees (such as senior students or unemployed individuals actively seeking jobs). After receiving responses, respondents who did not meet the criteria were excluded from the study. All respondents were anonymized to allow participants to share information without fear of society.

Figure 1

Study Model



We used Google Forms to share the link to the questionnaire through direct messages and the comments section of relevant posted content. The first section of the questionnaire included demographic questions such as age and what participants do for a living. The second section contained questions on time spent on social media and TikTok. The next part of the questionnaire measures the emotional connection; we used construct questions developed by Jenkins-Guarnieri et al., (2013) to measure the emotional connection to TikTok use. Some questions were edited to fit the focus of our research. The fourth section measured attention span; using a construct developed by Michael & Greher (2000). The questionnaire questions were straightforward and easy to read. Since we conducted this questionnaire in Saudi Arabia,

our questions were represented in both English and Arabic to overcome language barriers. The average time respondents took to complete the questionnaire was approximately 10 minutes.

The analysis of data collected from the questionnaires was done using statistical analysis methods. Specifically, data was analysed using SPSS software. Regression analysis was used for hypothesis testing. In running regression analysis, we included the variables 'age' and 'gender' as control variables. We expected these variables to be correlated with attention span (Mark, 2023). The analysis employed along with their results are outlined in the next section.

4 RESULTS

Cronbach's alpha statistics were utilized in this study to test the questionnaire's reliability. The reliability test assesses the accuracy of the questionnaire's objects. The minimal Cronbach's alpha is 0.7, and higher results indicate higher reliability (Nunnally, 1978). The questionnaire was used to assess attention span and TikTok use.

Table 1

Reliability

Cronbach's Alpha	N of Items
0.818	10

For the items measuring attention span and emotional connection, Cronbach's coefficient was 0.818 which is greater than the minimum value.

Table 2

Respondents' Characteristics

Variables	Classification	Frequency	Percentage
Age	18 - 24	168	79.60%
	25 - 30	7	3.30%
	31 - 40	8	3.80%
	41 - 50	17	8.10%
	Above 50	11	5.20%
Gender	Female	189	89.60%
	Male	22	10.40%

Participants age ranged between 18 and above 50. However, most respondents were aged 18 – 24, with 168 responses. 89.6% of the respondents were female, and 10.4% were male.

Table 3

Mean and Standard deviation

Variables	N	Mean	Std. Deviation
On average, how frequently do you use social media (e.g., Twitter, Instagram, Snapchat...)?	211	0.76	1.097
On average, how frequently do you use TikTok?	211	2.06	1.831
Attention span (construct)	211	2.0654	0.96475
Use of TikTok (construct)	211	2.4616	1.01033

The frequency of using social media illustrates that 52.1% use social media for more than 6 hours daily ($M = 0.76$, $SD = 1.097$).

The participants time on TikTok ranged from 2 hours weekly to more than 6 hours a day ($M = 2.06$, $SD = 1.831$). The most frequent hours used for TikTok were 3-6 hours daily.

We had a construct measuring attention span ($M = 2.0654$, $SD = 0.96465$). For the construct measuring respondents' emotional connection to TikTok use: ($M = 2.4616$, $SD = 1.01033$).

4.1 TESTING FOR HYPOTHESIS 1: THE RELATIONSHIP BETWEEN TIME SPENT ON TIKTOK AND ATTENTION SPAN

H1. Time spent on TikTok affects the attention span negatively.

DV: Attention span

IV: The time spent on TikTok

Table 4

Correlation for H1

		Age	Gender	Time Spent on TikTok	Attention Span
Age	Pearson Correlation	1	-.100	.149*	-.310**
	Sig. (2-tailed)		.149	.030	<.001
	N	211	211	211	211
Gender	Pearson Correlation	-.100	1	-.039	.023
	Sig. (2-tailed)	.149		.569	.738
	N	211	211	211	211
Time Spent on TikTok	Pearson Correlation	.149*	-.039	1	-.283**
	Sig. (2-tailed)	.030	.569		<.001
	N	211	211	211	211
Attention Span	Pearson Correlation	-.310**	.023	-.283**	1
	Sig. (2-tailed)	<.001	.738	<.001	
	N	211	211	211	211

*. Correlation is significant at the 0.05 level (2-tailed).

**.. Correlation is significant at the 0.01 level (2-tailed).

Table 5

Regression Model (H1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.392 ^a	.153	.141	.89406

Predictors: (Constant), Gender, frequent use of TikTok, age

Table 6

ANOVA (H1)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.993	3	9.998	12.50	<.001 ^b
	Residual	165.465	207	.799		
	Total	195.457	210			

a. Dependent Variable: Attention span

Predictors: (Constant), Gender, frequent use of TikTok, age

As shown in Tables 5 and 6, the model is significant (adjusted R square = 0.141). $F(3,207) = 12.50, p < 0.001$. Since the p-value = 0.001 is less than 0.05, we have enough evidence to accept the hypothesis that time spent on TikTok affects the attention span negatively.

4.2 TESTING FOR HYPOTHESIS 2: THE RELATIONSHIP BETWEEN TIME SPENT ON SOCIAL MEDIA AND ATTENTION SPAN.

H2. Time spent on social media affects attention span negatively.

DV: Attention span

IV: Time spent on social media

Table 7

Correlation for H2

		Age	Gender	Time spent on social media	Attention span
Age	Pearson Correlation	1	-.100	.071	-.310**
	Sig. (2-tailed)		.149	.307	<.001
	N	211	211	211	211
Gender	Pearson Correlation	-.100	1	-.090	.023
	Sig. (2-tailed)	.149		.195	.738
	N	211	211	211	211
Time spent on social media	Pearson Correlation	.071	-.090	1	-.294**
	Sig. (2-tailed)	.307	.195		<.001
	N	211	211	211	211
Attention span	Pearson Correlation	-.310**	.023	-.294**	1
	Sig. (2-tailed)	<.001	.738	<.001	
	N	211	211	211	211

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8

Regression Model (H2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414 ^a	.171	.159	.88461

a. Predictors: (Constant), Time spent on social media, age, gender.

Table 9

ANOVA (H2)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.474	3	11.158	14.26	<.001 ^b
	Residual	161.983	207	.783		
	Total	195.457	210			

a. Dependent Variable: Attention span (compound)

b. Predictors: (Constant), Time spent on social media, age, gender.

The results are shown in Tables 8 and 9 (adjusted R square= 0.159). $F(3, 207) = 14.259$, $p < 0.001$. The hypothesis is accepted since the p-value = 0.001 is smaller than 0.05; time spent on social media has a negative impact on attention span.

4.3 TESTING FOR HYPOTHESIS 3: THE RELATIONSHIP BETWEEN EMOTIONAL CONNECTION TO TIKTOK USE AND ATTENTION SPAN.

H3. Emotional connection to TikTok use affects attention span negatively.

DV: Attention span

IV: Emotional connection

Table 10 outlines correlations among variables. Tables 11 and 12 illustrate the results of hypothesis testing.

Table 10

Correlation for H3

		Age	Gender	Emotional connection	Attention span
Age	Pearson Correlation	1	-.100	.190**	-.310**
	Sig. (2-tailed)		.149	.006	<.001
	N	211	211	211	211
Gender	Pearson Correlation	-.100	1	-.133	.023
	Sig. (2-tailed)	.149		.054	.738
	N	211	211	211	211
Emotional connection	Pearson Correlation	.190**	-.133	1	-.312**
	Sig. (2-tailed)	.006	.054		<.001
	N	211	211	211	211
Attention span	Pearson Correlation	-.310**	.023	-.312**	1
	Sig. (2-tailed)	<.001	.738	<.001	
	N	211	211	211	211

** . Correlation is significant at the 0.01 level (2-tailed).

Table 11

Regression Model (H3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.405 ^a	.164	.152	.88848

a. Predictors: (Constant), emotional connection (compound), gender, age

Table 12

ANOVA (H3)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.052	3	10.684	13.534	<.001 ^b
	Residual	163.405	207	.789		
	Total	195.457	210			

a. Dependent Variable: Attention span (compound)

Predictors: (Constant), emotional connection (compound), gender, age

The results are shown in Table 11 and 12 (Adjusted R = 0.152). $F(3, 207) = 13.534$, $p < 0.001$. The hypothesis is accepted since the p-value = 0.001 is smaller than 0.05; Emotional connection to TikTok use has a negative impact on attention span.

In our analysis, the control variable 'age' was significantly negatively related to the dependent variable 'attention span'. On the other hand, 'gender' was not significantly related to the dependent variable.

5 DISCUSSION

The study investigates the impact of social media and TikTok on cognitive functions, specifically on attention span. The study investigated the effect of time spent and emotional connection to this use. Results of the study provide evidence that the use of social media in general, and TikTok in particular, can negatively affect attention span of employees.

The participant's use of TikTok ranged from 2 hours weekly to more than 6 hours daily. According to Riehm et al. (2019), three hours or more of social media daily had a 60% higher risk of health issues. In our results, 51.7% of participants used TikTok more than 3 hours a day. Findings suggest the influence of TikTok on users' health, including the influence on attention span. 51.2% did not agree that TikTok plays an essential role in their social relationships, and 55.9% were okay with not using TikTok. 73.5%, do not share many day-to-day activities on TikTok. 58.3% of the responders do not check their accounts when they get an alert of new activity on TikTok. Even though people disagree that TikTok plays an essential role in their lives, 53.1% of respondents claim that using TikTok has become part of their everyday routine. This finding confirms to the results of studies highlighting the negative influence of Technology on individuals' health (See, for example: Carr, 2020; Greenfield, 2015; Wolf, 2018), and provides evidence on the impact of specific and relatively recent platforms, i.e., TikTok. Findings also provide evidence of the discrepancies between people's perceptions and reality concerning their use.

Findings of this research conclude that time spent on TikTok affects the attention span negatively (Table 5). The data also revealed a result we were not expecting, i.e., a positive relationship between the age of the participants and the hours they spend on TikTok, $r = 0.149$. As the age increases, the use of TikTok increases as well. Even though most of the responders were between the ages of 18 – 24, surprisingly, more than 20 participants were above 50. Their increased time spent on TikTok could be attributed to their autonomy. Although the role of age was not a focus of the study, we saw mentioning this finding in our discussion as worthwhile. It highlights how the use and effect of TikTok are prevalent and not necessarily exclusive to younger generations as dominantly perceived (See, for example, Carbonaro, 2023). An essential part of the results was the negative relationship between the time users spent on TikTok and the attention span, $r = - 0.283$. The longer they use TikTok, the less attention span people would have.

Another finding of the research concerns the negative relationship between time spent on social media and attention span (H2). The data shows that longer periods of social media use is associated with decreased attention span, $r = -0.294$. (Table 7). As shown in (Table 8), the model was significant (adjusted R-squared= 0.159). $F(3,207) = 14.259$, $p < 0.001$. The relationship between social media and attention span is not new, as previous research has also highlighted this negative relationship (See, for example, Subramanian, 2018; Kies et al., 2018). However, this study confirms these findings in a different research setting, i.e., in the Saudi society. As mentioned in (Table 5), R-squared is 0.141. Testing for this hypothesis also provided us with information regarding the extent of this effect. Specifically, the increase in the adjusted R-squared means that the effect social media has on the attention span is greater than the effect of TikTok. This confirms to studies highlighting how multitasking (for example, navigating through various content in various social media platforms) can negatively affect attention span (See, for example, Hembrooke & Gay, 2003; Kies et al., 2018).

This research also highlights the negative relationship between emotional connection to TikTok use and attention span (H3). The relationship discovered between emotional connection to TikTok use and attention span was negative, $r = -0.312$ (Refer to Table 10). The model was significant (adjusted R-squared= 0.152), as indicated in (Table 11). $F(3,207) = 13.534$, $p < 0.001$. Hence, hypothesis 3 is accepted. This finding shows that attention span is affected negatively not only by the time spent on the platform but also by users' emotional connection to this platform. This supports the findings of studies highlighting the effect of other platforms on users' emotional connection (See, for example, Jenkins-Guarnieri et al., 2013; Maguire & Pellosmaa, 2020; Zahra, 2022)

Accordingly, it can be concluded that even though applications are useful and easy to use, social media in general and TikTok, in particular, can lead to a decline in attention span and make it harder to concentrate on work tasks for an extended period. This relationship was evident in relation to time spent and in relation to the perceived importance and emotional attachment to the platform. Such findings can be useful for individual employees, students, and members of the larger society in understanding external factors affecting their cognitive functions and facilitating preventive measures. Findings are also useful at an institutional level, enabling organizations and universities to understand the effect of digital platforms, and consequently consider governing their use on their networks.

Like all research, this study has limitations that need to be identified. First, because of the voluntary nature of research participation, there was a noticeable difference in the number

of female participants compared to male participants. This imbalance may limit the generalizability of the findings. Future studies on TikTok may use a different sampling technique to encourage responses while maintaining balanced respondents' characteristics. Another limitation is the self-reported measures used to collect data. Participants may have overestimated or underestimated the time spent on digital platforms or their emotional attachment to the platform, potentially being subject to bias. Future studies can address this topic using different methodological approaches, such as through experiments strategy. Future research can also study a range of additional variables that may impact attention span, such as testing the impact of personality or frequency of user-generated content. Research adopting qualitative methodology can also deepen our understanding of the topic.

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