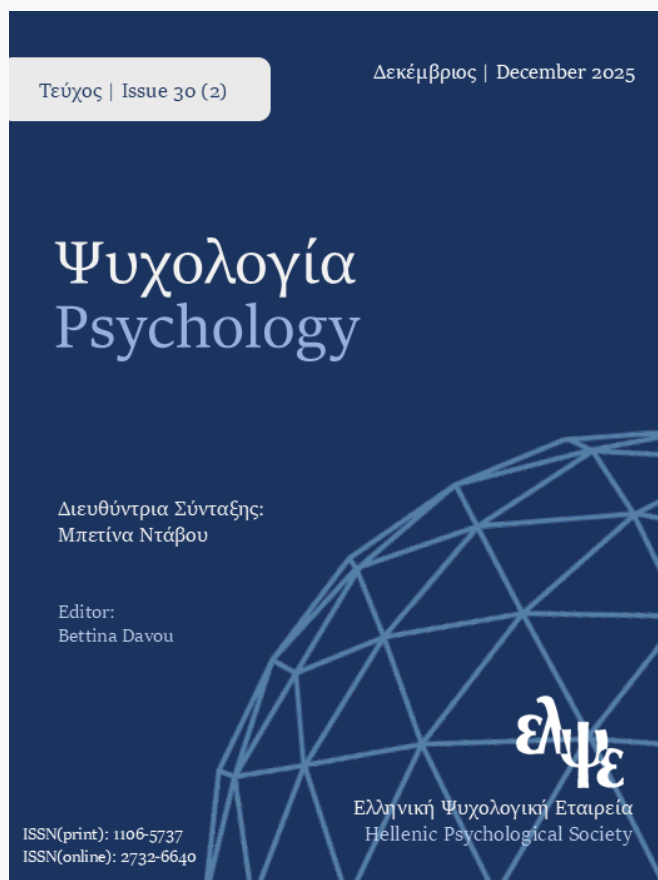# Psychology: the Journal of the Hellenic Psychological Society

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The relationship of social networking sites use with the psychological and sociocultural adaptation of native and immigrant adolescents

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The relationship of social networking sites use with the psychological and sociocultural adaptation of native and immigrant adolescents

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KEYWORDS	ABSTRACT
	The present study investigates the relationship of Social Networking Sites use with the psychological and sociocultural adaptation of native and immigrant adolescents, focusing on the underlying motives for Social Networking Sites use. The sample consisted of 380 adolescents, including 259 native Greeks and 121 immigrants, aged 14.4 years on average. The study employed Structural Equation Modeling to examine the direct and indirect effects of SNS motives on adaptation outcomes, including the mediating roles of self-efficacy, loneliness, and nostalgia, and the moderating effect of origin (native versus immigrant). Key results demonstrate both positive and negative effects of Social Networking Sites use on adolescent adaptation. The motives of entertainment and communication had distinct outcomes. Entertainment was negatively associated with sociocultural adaptation but positively associated with psychological adaptation via increased loneliness. Meanwhile, communication was positively correlated with both sociocultural and psychological adaptation, especially among immigrants. Escape was found to be associated negatively with adaptation through loneliness, highlighting the potential detrimental effects of using Social Networking Sites to avoid stress. Additionally, the mediating roles of self-efficacy, loneliness, and nostalgia were confirmed, though the moderating role of origin was partially supported. Specifically, immigrants displayed better adaptation when using Social Networking Sites for communication and entertainment compared to natives. These findings underscore the complexity of Social Networking Sites use and its multifaceted impact on adolescent well-being.

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Adolescence is a critical developmental stage during which individuals experience significant physical, emotional, and cognitive changes. For immigrant adolescents, these changes are further complicated by the challenges of adapting to a new country. A prominent framework for understanding cultural adaptation is John Berry's (1997) acculturation model. Berry (2015) refers to acculturation as the process by which individuals or groups undergo cultural change due to prolonged contact with a different culture. This model identifies two key dimensions: maintaining one's heritage culture and adopting the host culture. Additionally, Ward's acculturation model (Ward, 1996; Ward & Kennedy, 1999; Ward et al., 2001) expands on this by highlighting the dual processes of psychological adaptation (PsyA) and sociocultural adaptation (SCA) during cultural transitions, providing further insight into the experiences of individuals in new cultural environments.

While acculturation theories offer key insights into the adaptation process, in the digital era, social networking sites (SNS) have become influential platforms that shape adolescents' adaptation, by enabling both native and immigrant youth to engage with peers, express themselves, and maintain cultural ties.

Although these platforms are integral to modern communication, their influence on PsyA and SCA is multifaceted and not yet fully understood. Additionally, Ward's theory highlights the crucial role personal factors play in the adaptation process (Ward, 1996; Ward & Kennedy, 1999; Ward et al., 2001), with variables such as self-efficacy, loneliness, and nostalgia being particularly influential in shaping adaptation outcomes. This study aims to explore the role of SNS use in PsyA and SCA, focusing on how these personal variables interact with digital engagement to influence adolescent well-being and adaptation.

Migration flows in Greece

The above theoretical models provide a valuable framework for understanding the cultural transitions that take place across Europe and eventually other word countries. The European Union's economic prosperity and political stability have made it an attractive destination for immigrants from disadvantaged countries (Eurostat, 2019). During the 20th century, Greeks became immigrants and refugees through traumatic processes, due to political, historical, and social conditions (Papastylianou, 2012). However, since the 1990s, Greece has transitioned into a host country for many refugees and immigrants from diverse ethnic and cultural backgrounds (Georgas & Papastylianou, 1994, 1996; Papastylianou, 2000, 2001), resulting in greater cultural diversity (Pavlopoulos & Motti-Stefanidi, 2017).

The first distinct migration flow took place in the 1990s, with the end of the Cold War. Immigrants came mostly from countries of the former Soviet Union and the Balkans, mainly from Albania. After a historic decision and the opening of the Greek borders with the neighboring country in 1990, hundreds of thousands Northern Epirus Greeks who lived in the Albanian villages, as well as Albanian compatriots moved to Greece at that time (Papastylianou, 2012).

A second, ongoing wave of migration has resulted from conflicts in the Middle East and North Africa. This group consists mainly of refugees fleeing armed conflict and persecution, forced to cross international borders for safety. This migration flow that began about a decade ago and is ongoing. As of the first quarter of 2023, Greece's Ministry of Migration and Asylum had recorded 10,111 asylum seekers, primarily from Pakistan, Afghanistan, Palestine, and Syria (Hellenic Republic, 2023). The 2021 population-housing census in Greece revealed that, out of 10,482,487 permanent residents, 9,716,889 (92.7%) are Greek citizens. Out of the resident population with non-Greek citizenship, 116,669 are from EU countries, 439,254 are from non-EU European countries, 33,471 are from African nations, 5,607 from North America, 158,530 from Asian countries, and smaller numbers from other parts of the world. The resident population with non-Greek citizenship mainly come from Albania (49.0%), followed by Bulgaria (4.6%), Pakistan (4.6%), Romania (3.7%), and Georgia (3.4%) (Hellenic Statistical Authority, 2023).

Research on the adaptation of adolescent immigrants in Greece suggests differing outcomes based on country of origin and sociocultural living conditions. For example, children of returning expatriates from English-speaking countries experience significant challenges in their social activities (Papastylianou, 1992). In contrast, Pontian adolescents returning from the former Soviet Union exhibit fewer internalizing problems and face fewer difficulties compared to their peers from Albania (Motti-Stefanidi et al., 2008).

In conclusion, during the last decades, immigrants and refugees of different ethnic and cultural origins have arrived in Greece. While the country was initially unprepared to manage these flows in the 1990s, recent legislative reforms have led to more open and integrative immigration policies (Triandafyllidou, 2019).

Social networking sites

SNS have become the most widespread platforms for online activity in the world, with a global annual social network user growth of 5.8%, and the total number of social media users expected to hit over 4.4 billion

individuals by 2025, approximately half of the world population (Statista, 2022). The development of digital technology and the simultaneous increase of people's mobility worldwide, has increased the researchers' interest for the study of acculturation in relation to SNS (Wen, 2020).

Adolescents use social media to fulfill basic psychological needs, including relatedness and autonomy, which are crucial for their identity development. Positive online interactions contribute to a sense of belonging and well-being, while negative interactions, such as social alienation, can hinder their psychological health (Parent, 2023). Adolescents rely on online platforms for self-expression and peer validation, which are critical during this developmental stage. Social media engagement helps them construct their identities, but it also presents risks like lowered self-esteem when feedback is unfavorable (Nesi et al., 2020). These recent findings demonstrate how internet communication reshapes adolescent interactions and supports or challenges their developmental needs.

Especially for adolescent immigrants who experience adaptation difficulties due to the processes of identity formation (Papastylianou, 2000), the internet facilitates the formation of an emerging national identity, an important developmental achievement for immigrant youth (Lu & Benet, 2020). Engagement and familiarity with social networks can help immigrant students better adapt to a new society (Forbush & Foucault-Welles, 2016). Social contact, including interaction with both their country of origin and the host country, significantly affects the well-being of newcomers (Bierwiaczonek & Waldzus, 2016). Engagement with SNS significantly aids the processes of adaptation and socialization with peers in the classroom and the wider school context. Online social networks, such as Facebook and Instagram, give immigrant students the opportunity to interact with classmates and learn about the new culture. Immigrants cultivate intercultural competence and develop relationships with the broader network of people who facilitate acculturation processes (Kumi-Yebaoh et al., 2020).

Adaptation and social networking sites use

SCA along with PsyA have been conceptualized as key aspects of intercultural adaptation (Ward, 1996; Ward & Kennedy, 1999; Ward et al., 2001). SCA refers to how well individuals acquire the social skills and cultural knowledge necessary to interact effectively in a new environment. Immigrant adolescents often rely on SNS to facilitate this process, using these platforms to learn about the host culture while maintaining connections to their heritage (Kumi-Yebaoh et al., 2020).

PsyA is defined as how individuals adjust their cognitive and emotional responses to fit into new environments or manage new situations. This process involves utilizing coping mechanisms and regulating emotions to maintain mental well-being, even in the face of external changes. In the context of PsyA, flourishing refers to thriving in emotional and psychological well-being. It involves not just coping with stress but excelling by maintaining positive emotions, a sense of purpose, and strong social connections (Leontopoulou, 2015). Flourishing acts both as a protective mechanism and a developmental objective during adolescence. It equips young individuals with the tools to handle stress, set and achieve goals, and integrate successfully into their social environments (Leontopoulou, 2015, 2020; Parola & Marcionetti, 2023). Flourishing is closely linked to SNS use during adolescence. SNS provide spaces for adolescents to foster relationships, gain social support, and express themselves, all of which are key components of flourishing (Leontopoulou, 2015). However, the quality and purpose of SNS use are critical, as these platforms can either support or hinder flourishing depending on how they are utilized—whether for positive engagement or for escapism and avoidance (Yang & Lee, 2021).

In conclusion, SNS play a crucial role in facilitating or impeding both PsyA and SCA during adolescence, especially for immigrant youth. These platforms can help adolescents acquire cultural knowledge, develop social ties, and manage emotional challenges, but they can also lead to negative outcomes, such as social isolation, depending on how they are used. Thus, SNS have a dynamic influence on the adaptation process, shaping both opportunities and challenges in the adolescent developmental journey. However, this relationship between adaptation and SNS use is not only influenced by external social dynamics but also by personal characteristics such as self-efficacy, loneliness and nostalgia. Studying these individual traits is essential to understanding how adolescents navigate digital environments and how their PsyA and SCA can vary based on these intrinsic factors.

Self-efficacy, loneliness, and nostalgia

Self-efficacy, loneliness, and nostalgia are intricately linked through the process of SCA and PsyA, particularly with the influence of SNS. As far as self-efficacy is concerned, it plays a critical role in how effectively adolescents navigate both PsyA and SCA. Those with higher self-efficacy are better equipped to manage stress and integrate into new environments, particularly for immigrants who face the dual challenge of learning new cultural norms while retaining ties to their origin (Bandura, 1997; Reitz et al., 2014). In specific, moving to another country seems to have a negative effect on the sense of self-efficacy (Titzmann & Jugert, 2017). Self-efficacy has been found to be positively related to adaptation (Magnet de Saissy, 2009), mental health and well-being (David et al., 2009), better academic performance, fewer psychological symptoms and behavioral problems, and higher peer popularity (Motti-Stefanidi et al., 2012). Immigrant adolescents with high self-efficacy seem to achieve better adaptation in the new society (David et al., 2009). Learning the language, manners and customs of the new culture allows immigrants to participate adequately in social activities, which in turn enhances their sense of self-efficacy (Reitz et al., 2014). However, the frequent use of SNS may reduce opportunities for real-life social engagement, undermining self-efficacy and thus negatively affecting adaptation (Al-Dwaikat et al., 2020).

During adolescence, loneliness is associated with social and developmental changes. The growing need for autonomy and the desire to build the identity of the Ego beyond the immediate family environment, is reflected in the growing separation from parents and attempts to create relationships with peers in the wider social environment. However, while it is often considered detrimental, loneliness has a complex relationship with adolescent well-being, with the literature supporting that loneliness is both a negative and positive indicator of adaptation. For example, Neto (2016) claims that loneliness effects negatively PsyA of immigrant population. On the other hand, many theorists differentiate the terms loneliness and solitude, supporting the beneficial nature of solitude. From this perspective, solitude is perceived as a means of personal exploration and development, with many research findings confirming the positive association of solitude with indices of adolescent adaptation and mental health (e.g., Larson & Csikszentmihalyi, 1978; Larson et al., 1982). These mixed findings might be due firstly to the conceptual confusion of the terms loneliness and solitude, which appear to have been used interchangeably, secondly the lack of different measurements of loneliness and solitude for this age group, and lastly the fact that different methods have been used to assess attitude toward loneliness and solitude (Galanaki, 2013). Regarding the relationship between loneliness, SNS and adaptation, studies claim that when used for meaningful communication, SNS can alleviate loneliness by fostering connections that support psychological flourishing. However, excessive use for escapism can exacerbate feelings of isolation, particularly among immigrants who may already feel disconnected from their peers (Yang & Lee, 2020).

Lastly, until the end of the 20th century, nostalgia was largely considered synonymous to homesickness, a feeling that arises when a person is away from home for a long time and misses his/her place, family, and friends (Hepper et al., 2012). In the last decades, nostalgia came to be considered mostly as a positive emotion, and differentiated from homesickness, a mostly sad emotion, associated with psychological issues (i.e., separation anxiety, rumination) due to moving to a new environment with a simultaneous emotional longing for the past (Sedikides et al., 2009). In specific, nostalgia, or the longing for the past, serves as a psychological anchor for immigrant adolescents, providing emotional comfort as they adjust to new cultural contexts. While nostalgia can enhance a sense of continuity and belonging (Sedikides et al., 2008), excessive focus on the past through SNS may obstruct engagement with the present, limiting adaptation, particularly for adolescents and immigrants adapting to new environments. When individuals repeatedly engage with nostalgic content or maintain excessive connections with their past via SNS, it can reinforce ties to their previous life and prevent full immersion in their current environment. This can limit both PsyA and SCA, as it reduces the opportunities to build new relationships and integrate into the new cultural context (Gaitán-Aguilar et al., 2022).

In conclusion, self-efficacy, loneliness, and nostalgia hold significant influence within the context of SCA and PsyA, particularly when shaped using SNS. These factors interact to affect how individuals cope with new environments and experiences, with SNS playing a pivotal role in both facilitating and complicating the adaptation process.

The current study

Adolescence is a developmental period of transition to a new elevated status, in which factors such as culture, religion, community and family form identity (Newman & Newman, 2020). Young immigrants go through important developmental changes simultaneously with the acculturation processes, which eventually leads to the two processes being confused (Sam & Berry, 2010). The incorporation of developmental principles in acculturation processes is crucial in understanding adaptation of immigrant youth (Berry et al., 2011). Adaptation to the new environment occurs through cultural and psychological changes, acculturation stress, and cultural learning (Ward, 1996). Adaptation is distinguished into PsyA and SCA, while it includes a variety of variables at the micro and macro level, as predictors of the outcome of intercultural contact (Ward et al., 2001).

Although previous research has shed light on the processes of acculturation and adolescent adaptation, the specific role of SNS use in these processes remains underexplored, particularly with regard to PsyA and SCA. While it is well established that SNS use can affect adolescents' well-being, mental health, and social integration (e.g., reducing loneliness, increasing social capital) (McDool et al., 2020; Schønning et al., 2020), little is known about how these platforms interact with the adaptation process, especially in terms of acculturation for immigrant youth (Ju et al., 2021). Understanding how SNS facilitates or hinders adaptation in this context remains a key research gap (Klein et al., 2020).

Additionally, there is a lack of comprehensive research into the mediating roles of self-efficacy, loneliness, and nostalgia on the relationship between SNS use and adaptation outcomes. Self-efficacy is often studied as a mediator between SNS use and adaptation in adolescents because it plays a crucial role in how individuals manage their online experiences and cope with the challenges associated with social media use (Hu et al., 2018). At the same time, research indicates that loneliness can act as both a positive and negative mediator between SNS use and the adaptation of adolescents, influencing their mental health and social outcomes (e.g., Lin et al. 2022; Yam et al., 2024). Lastly, in the literature, nostalgia is recognized as a mediator in the relationship between SNS use and subjective well-being. For example, Cox et al. (2015) found that nostalgia

acts as a mediator, enhancing life satisfaction and relationship fulfillment when participants engage with nostalgic online content. This highlights the important role nostalgia can play in mediating the effects of SNS use on well-being in various contexts, particularly through its ability to evoke positive emotional and social connections.

Moreover, there is a critical gap in understanding how origin (native vs. immigrant) moderates the relationship between SNS use and adaptation. SNS impact immigrant adolescents differently than their native peers due to the distinct roles these platforms play in their acculturation and cultural identity maintenance (e.g., Cao & Jia, 2024; Shannon et al., 2022). Understanding how the use of SNS influences acculturation and adaptation in immigrant adolescents, as compared to native adolescents, is essential for gaining deeper insights into these developmental processes.

The identified research gaps highlight the need for a more nuanced understanding of how SNS use interacts with adolescent adaptation processes, especially in relation to key psychological factors such as self-efficacy, loneliness, and nostalgia. Addressing these gaps is essential for examining the complex role SNS plays in shaping both PsyA and SCA, particularly for immigrant youth. Building on this foundation, the formulation of the study's hypotheses seeks to investigate these dynamics further, providing a structured framework to explore the direct, mediating, and moderating relationships involved in adolescent adaptation through SNS use. This connection sets the stage for a systematic investigation into how adolescents' motives for SNS use, combined with individual characteristics and cultural background, influence their adaptation outcomes.

Cultural adaptation is not a one-sided process; it involves both the immigrant group and the host society. In our study, we included native adolescents to better understand the dynamics between the two groups. For ethical reasons, it was essential to ensure that all students were included and treated equitably, thereby promoting cultural sensitivity and avoiding discrimination or the reinforcement of stereotypes. Moreover, by collecting the data from schools, the natural environment of adolescents, we obtained a more comprehensive view of immigrants' adaptation. Understanding the nature of interactions between immigrant teenagers and native peers is key to studying cultural adaptation. Additionally, including native adolescents allowed for a comparative analysis, distinguishing between general adolescent issues and those specifically related to cultural adaptation.

Buiding on the above, the study formulates three primary hypotheses concerning the relationship between SNS use and the PsyA and SCA of adolescents, with a focus on both native and immigrant populations. Additionally, it explores the mediating effects of self-efficacy, loneliness, and nostalgia, as well as the moderating influence of origin (immigrant versus native) on these relationships.

1. *Motives for SNS Use and Their Effect on Adaptation.* The first hypothesis investigates how the motives behind SNS use—in specific entertainment, escape, communication, affect, companionship, information and nostalgia-sense of belonging, impact the PsyA and SCA of adolescents. For instance, SNS use for communication is expected to strengthen social ties and reduce feelings of isolation, thus improving adaptation (Li et al., 2019). In contrast, using SNS as a form of escapism may hinder adaptation by fostering avoidance behaviors (Shannon et a., 2022).

2. *Mediating Roles of Self-Efficacy, Loneliness, and Nostalgia.* The second hypothesis investigates how self-efficacy, loneliness, and nostalgia mediate the relationship between motives for SNS use and adaptation outcomes. Adolescents with higher self-efficacy tend to engage in more positive online interactions, which enhances their psychological well-being (Cattelino et al. 2021). Loneliness can serve as both a positive and negative mediator, depending on the nature of online interactions (Yang & Lee, 2020). For immigrant

adolescents, nostalgia acts as a coping tool to manage acculturation stress by maintaining emotional connections to their heritage (Sedikides et al., 2020).

3. *Moderating Role of Origin (Native vs. Immigrant)*. The third hypothesis investigates how an adolescent's background—whether native or immigrant—moderates the relationship between SNS use and adaptation. SNS impact immigrant adolescents in a different way from native peers because these platforms play distinct roles in either supporting or hindering the acculturation process (e.g. Lai, 2021).

Method

Participants

Participants were selected through purposive cluster sampling, a technique that combines elements of both purposive and cluster sampling. This method is used when researchers need to target specific groups or clusters while considering logistical, practical, or strategic constraints (Etikan et al., 2016). The technique allowed us to deliberately choose clusters most relevant to our study's objectives and ensured that the selected clusters contained adolescent students, both native and immigrant. Since it was impractical to cover a broad geographic area, clusters were chosen based on ease of access and relevance to the study (Patton, 2014). Participants were 380 students (42.1% male) of the 2nd and 3rd grade of Attica public junior high schools (age M = 14.4), natives (68.2%) and immigrants (31.8%). The group of immigrants was consisted of 75.2% second-generation immigrants. Immigrant-origin adolescents are defined as those who have at least one foreign-born parent according to their statement. This group includes both the first generation who were born out-side the host country and second-generation immigrants who were born within the host country (Suárez-Orozco et al., 2015). Their country of birth was mainly Albania, Romania, Bulgaria, and Russia. The sociodemographic characteristics of participants are presented in Table 1.

Measurements

Demographic information. Participants reported information concerning their ethnicity, parents' ethnicity, sex, age, and birthplace.

Scale of Motives for Using Social Networking Sites. SNS motives were measured with 36 items, based on Why We Share-U&G Scale (Quinn & Papacharissi, 2018) and Internet Motives Scale (Papacharissi & Rubin, 2000). Following earlier studies that assessed motives for using the internet, five out of nine factors from the Why We Share-U&G Scale (Quinn & Papacharissi, 2018) were used, and two new factors were added. The first factor, Information, included five statements: "To learn Greece better ", "To learn more about Greek history, tradition, customs and beliefs", "To gain more knowledge", "To get updated on daily issues' and "To look for information". Information constitutes main motive for using SNS on the part of immigrant teenagers (Canhilal et al., 2020). The second factor was Nostalgia-Sense of Belonging and included four statements: "To communicate with relatives and friends from other countries", It gives me relief to talk to relatives and friends who live in other countries", "It helps me remember my relationships with people and places I have lived" and "It makes me feel that I belong to another group of people in relation to my origin". According to the literature, nostalgia and sense of belonging in cultural group can be an important resource for immigrant youth and affect the processes of adaptation of immigrant teenagers (Juang et al. 2018). The scale was translated and adapted into Greek by following the guidelines of Sousa and Rojjanasrirat (2011) for translating, adapting, and validating instruments in cross-cultural healthcare research, and utilizing Brislin's

(1970) translation and back-translation method. We assessed the scale's construct validity using Exploratory Factor Analysis (EFA). In the present study, Cronbach's alpha reliabilities of the subscales ranged from .51 to .78 (Table 6).

Revised Sociocultural Adaptation Scale. SCA was measured using the Revised Sociocultural Adaptation Scale (SCAS-R) (Wilson, 2013; Wilson et al., 2017). The original version of this scale is the Sociocultural Adaptation Scale (Ward & Kennedy, 1999). The scale consisted of 21 items and measured the degree to which the adolescents were feeling able to respond in various areas of everyday life in Greece (i.e., clothing style, food, friendships, religious beliefs, social activities, etc.). We translated and adapted the scale into Greek by following Sousa and Rojjanasrirat's (2011) guidelines and using Brislin's (1970) translation and back-translation method. To evaluate the scale's construct validity, we conducted an EFA. In the present study, the internal reliability of the scale was α = .84 (Table 6).

The Flourishing Scale. PsyA was measured with the Flourishing Scale (Diener et al., 2009). In the present study, we used the Greek version of the scale (Leontopoulou, 2020). The scale possesses satisfactory psychometric properties and is reliable and valid for studying well-being/wellness in the Greek population (Leontopoulou, 2020). In previous research, flourishing has been considered as an indicator of psychosocial adaptation of immigrants (Ando, 2014). Regarding adolescents, the Flourishing Scale has been used to measure psychological wellbeing both in general (e.g. Romano et al., 2020) and immigrant adolescent population (e.g. Cobb et al., 2018). The participants were asked to report the extent to which they were feeling personally accomplished in key areas of life, such as relationships, self-esteem, optimism, and goals. The scale consisted of eight items. In the present study, the internal reliability of the scale was α = .85 (Table 6).

Perceived Self-Efficacy Scale. Self-efficacy was measured using the Perceived Self-efficacy Scale (Karademas, 2006), a psychometric tool that measured self-efficacy expectations in various situations, such as seeking social support, school success, learning procedure, and assertiveness. In the present study, the internal reliability of the scale was α = .86 (Table 6).

Loneliness Subscale from Social Dissatisfaction Scale. Loneliness was measured with Loneliness subscale of the Loneliness and Social Dissatisfaction Scale (Asher & Wheeler, 1985). The translation and adaptation of the scale in Greece were carried out by Galanaki and Kalantzi-Azizi (1999). The pure loneliness subscale consists of three items that refer to the feeling of loneliness (Parker & Asher, 1993). This subscale has been used in several studies to assess loneliness in children and adolescents (e.g. Parker & Asher, 1993; Rotenberg et al., 2004). The scale has been administered to individuals of different ethnic origins with satisfactory psychometric properties (Bagner et al., 2004). In the present work, the internal reliability of the subscale was α = .81 (Table 6).

Southampton Nostalgia Scale. Nostalgia was measured using the Southampton Nostalgia Scale (Barrett et al., 2010). The scale measured individual's tendency to feel nostalgic, as well as the frequency and importance of nostalgia. A high score indicated high level of nostalgia experience. Previous studies have shown that the scale possesses good reliability (Barrett et al., 2010; Cheung et al., 2016, 2018) and construct validity (Juhl et al., 2010). To translate and adapt the scale into Greek, we followed the guidelines outlined by Sousa and Rojjanasrirat (2011) for translating, adapting, and validating instruments in cross-cultural healthcare research, employing Brislin's (1970) method. In the present study, the internal reliability was α = .85 (Table 6).

Procedure

Following the guidelines of Sousa and Rojjanasrirat (2011) for translation, adaptation and validation of instruments in cross-cultural health care research and adopting the translation/back translation method (Brislin, 1970), the Scale of Motives for Using SNS, the Revised Scale of Sociocultural Adaptation, and the Southampton Nostalgia Scale were forward translated from English to Greek by two independent translators. Having compared the two translated versions of the instruments, the preliminary initial Greek version of the instruments was generated. That initial scale was then blind back translated in English by two other independent, resulting in two versions which were compared. Conceptual equivalence is one of the most important factors to ensure validity in a cross-cultural research Berry (1969). The pre-final Greek version of the instruments was pilot tested among 50 Greek adolescents. According to Beaton et al. (2000) and Sousa et al. (2009) a sample size of 10–40 individuals is recommended.

Data was collected in 13 schools, where students completed the questionnaires individually in classrooms. Participation was voluntary and required informed consent, both from the parent and the adolescent, while the questionnaires were anonymous. The research project was approved by the ethics committee of the Institute of Educational Policy, a Ministry of Education, Religious Affairs and Sports scientific agency, that deals with scientific research (13/7/2018, Protocol Number 119156/D2).

Data analysis

The collected data in this study was analyzed using IBM SPSS Statistics version 26.0. Descriptive statistics were used in the analysis of quantitative data, such as demographic characteristics. For the continuous data, normality was assessed through the Kolmogorov Sminrov normality test and the z scores of skewness and kurtosis (Table 3). Pearson r correlation coefficient was used for the correlation between the variables. Construct validity of the Scale of Motives for Using Social Networking Sites and the Revised Scale of Sociocultural Adaptation was assessed through Exploratory Factor Analysis (EFA).

To calculate the power of the study, the statistical program R (Preacher & Coffman, 2006) was used with a significance level of $\alpha = .05$, a sample size of 380, a target value of the RMSEA index equal to 0, and an alternative value equal to .08. For the higher degrees of freedom (49), the power was found to be .999, and for the lower degrees of freedom (14), it was equal to .989.

The study utilized Structural Equation Modeling (SEM) to investigate the direct and indirect effects of SNS motives on adaptation outcomes, considering the mediating roles of self-efficacy, loneliness, and nostalgia, as well as the moderating effect of origin (native versus immigrant). AMOS Version 26.0 software was used to conduct the SEM analysis (Tabachnick & Fidell, 2007). While cross-sectional designs do not establish clear temporal relationships between variables, they can still offer valuable insights into mediation processes and help lay the foundation for future longitudinal studies (Maxwell & Cole, 2007). Mediation analysis in cross-sectional research is appropriate when strong theoretical support exists for the assumed ordering of variables (Hayes, 2013). In this study, we relied on well-established theories to justify the proposed relationships between the independent variable, mediator, and outcome (e.g., Cox et el., 2015; Hu et al., 2018; Lin et al. 2022; Yam et al., 2024), allowing us to explore whether the mediator accounts for the relationship between the independent variable and the outcome.

Also, Iacobucci et al. (2007) argue that mediation analysis in cross-sectional studies can be useful for exploring relationships and testing early hypotheses. Although causality cannot be established, these analyses help identify potential mediators, which can later be validated in longitudinal research. Cross-sectional mediation models often act as an initial step toward more comprehensive research designs. The objective of

the present study was to explore relationships and test early hypotheses. As Selig and Preacher (2009) point out, when longitudinal data is unavailable, cross-sectional mediation analysis can still provide insights into potential pathways between variables. However, the findings of this study are preliminary, and care should be taken in interpreting the results.

The results are presented as having 95% confidence intervals.

Results

Demographics

Sociodemographic characteristics of the qualitative data are presented by absolute (n) and relative frequency (%). The quantitative data are presented by mean (M) and standard deviation (SD). Significant differences in demographic characteristics between natives and immigrants were as follows: both mothers and fathers of native teenagers showed significantly higher levels of education compared to parents of immigrants ($p < .001$). Also, mothers of native adolescents were significantly more likely to be employed than mothers of immigrants ($p < .001$) (Table 1).

Exploratory factor analysis

Construct validity of the Scale of Motives for Using SNS and the SCAS-R was assessed through EFA. EFA was employed as these two scales were not established and validated in adolescent population in Greece prior to 2017 when this study was designed. EFA is a vital step in the process of adapting scales for use in new populations or contexts, as it allows the exploration and validation of the underlying factor structure, ensuring that the scale remains a reliable and valid tool for measurement in its newly adapted form (DeVellis, 2017). EFA was carried out with extraction of main axes. The feasibility of the analysis was evaluated with the Bartlett sphericity test and the Kaiser -Meyer - Olkin index (KMO). The structure was analysed with the Cattell sedimentation graph and the factor loads. Following the criterion proposed by Tabachnick and Fidell (2007), the factor loads must have been equal to or greater than .45. The structure was studied with the Varimax rotations. The results of the EFA are presented in Tables 2-5.

Cronbach alpha reliability test

The internal consistency of the scales was between .51 and .86. Cronbach's alpha results for the subscales of the Scale of Motives for Using SNS —Escape (three items, $\alpha = .64$), Communication (five items, $\alpha = .51$), and Nostalgia-Sense of Belonging (four items, $\alpha = .60$)—fell below the generally accepted threshold of .7. However, lower alpha values do not necessarily indicate an unsatisfactory instrument (Taber, 2017). Cronbach's alpha is sensitive to the number of items in a scale; scales with fewer items often result in lower alpha values, which reflect the mathematical relationship between item quantity and reliability rather than poor instrument quality (Cortina, 1993). Consistent with this, Griethuijsen et al. (2015), in their cross-national study, suggested that a slight increase in items could improve alpha values for factors falling below .6. Additionally, as scape, communication, and sense of belonging are considered primary motives for SNS use among adolescents, these subscales were retained to preserve the theoretical integrity of the study. In cases where the theoretical significance of the items is high or they offer unique insights, it is justifiable to retain them despite low Cronbach's alpha values (Streiner, 2003). The number of items and the reliability statistics of each scale are displayed in Table 6.

Table 1. *Sociodemographic characteristics of participants*

Social and Demographic Characteristics	Total sample		Natives		Immigrants		
	N	%	n	%	n	%	p
Immigrant Generation							
First Generation					30	24.8	
Second Generation					91	75.2	
Country of Birth							
Greece					91	75.2	
Albania					9	7.4	
Russia					3	2.5	
Romania					6	5.0	
Ukraine					3	2.5	
Bulgaria					6	5.0	
India					3	2.5	
Gender							.647
Male	160	42.1	107	41.3	53	43.8	
Female	220	57.9	152	58.7	68	56.2	
Number of Siblings							.105
None	94	24.7	58	22.4	36	29.8	
1	189	49.7	139	53.7	50	41.3	
2	72	18.9	44	17.0	28	23.1	
>2	25	6.6	18	6.9	7	5.8	
Mother's Educational Level							.000
Primary school/ Secondary school	52	14.4	16	6.5	36	32.7	
High school	127	35.3	84	34.1	43	39.1	
University	177	49.2	146	59.3	31	28.2	
Father's Educational Level							.000
Primary school/Secondary school	79	22.0	39	15.7	40	36.0	
High school	121	33.7	77	31.0	44	39.6	
University	159	44.3	132	53.2	27	24.3	
Father's Employment Status							.217
Unemployed	18	4.8	11	4.2	7	5.8	
Employed	351	92.4	238	91.9	113	93.4	
Retired	11	2.9	10	3.9	1	0.8	
Mother's Employment Status							.000
Unemployed	109	28.7	55	21.2	54	44.6	
Employed	269	70.8	202	78.0	67	55.4	
Retired	2	0.5	2	0.8			

Note. Participants (N = 380) were on average 14.4 years old (*SD* = 0.68).

Table 2. *Factor loadings for exploratory factor analysis of the Scale of Motives for SNS Use in the total sample*

Scale of Motives for SNS use Item	Factor loading						
	1	2	3	4	5	6	7
Q1 To communicate with relatives and friends from other countries.					.801		
Q2 To get away from what I'm doing.			.442				
Q3 Because I want to know what's happening with my friends and family.							.409
Q4 Because it's enjoyable			.776				
Q5 To let others know I care.	.681						
Q6 It is how people communicate these days/It is what people do these days.							.513
Q7 Because it is reassuring to know someone is there.	.620						
Q8 Because it's entertaining.			.812				
Q9 So I can get away from the rest of my family or others.		.447					
Q10 To learn more about Greek history, tradition, customs and beliefs.				.787			
Q11 I don't want to be miss out of what is going on with friends and family.	.401						.536
Q12 To keep in touch with friends/family.						.570	
Q13 It gives me relief to talk to relatives and friends who live in other countries.					.825		
Q14 To thank them or wish them well.	.423						
Q15 Because I can express myself freely.	.541						
Q16 Because it is a pleasant rest.			.740				
Q17 To belong to a group.	.569						

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Table 2. *Factor loadings for exploratory factor analysis of the Scale of Motives for SNS Use in the total sample*

Scale of Motives for SNS use Item	Factor loading						
	1	2	3	4	5	6	7
Q18 To show encouragement.	.746						
Q19 To get updated on daily issues.							
Q20 When there's no one else to talk or be with.		.657					
Q21 Because it allows me to unwind.		.572					
Q22 Look for information.				.605			
Q23 Keep in touch with people.						.691	
Q24 Everyone else is doing it.							.535
Q25 Makes me feel that I belong to another group of people in relation to my origin.					.562		
Q26 Because others accept me more online than offline.		.685					
Q27 So I can forget about school, work, or other things.		.529					
Q28 So I won't be alone.		.770					
Q29 Gain more knowledge.				.773			
Q30 Let others know I care.	.742						
Q31 Relaxes me.			.740				
Q32 Learn Greece better.				.778			
Q33 Communicate with distant friends.					.597		
Q34 Feel less lonely.		.674					
Q35 Helps me remember my relationships with people and places I have lived.						.565	
Q36 To help others.	.623						
Percentage of variability explained by each factor	10.4%	9.8%	9.1%	7.9%	7.1%	5.9%	5.6%

Table 3. *Reliability analysis of the Scale of Motives for Using SNS Use for the item factors based on the theoretical distribution of questions in the total sample*

Item Factors Based on the Theoretical Distribution	Cronbach's alpha			
	Items	Total	Natives	Immigrants
Entertainment	4,8,16,21,31	.78	.76	.71
Escape	2,9,27	.64	.68	.48
Communication	6,12,15,23,33	.51	.49	.57
Affect	5,14,18,26,30,36	.76	.74	.80
Companionship	3,7,11,17,20,24,28,34	.71	.68	.77
Information	10,19,22,29,32	.74	.78	.64
Nostalgia-Sense of Belonging	1,13,25,35	.60	.63	.33

Table 4. *Factor loadings for exploratory factor analysis of the SCAS-R in the total sample*

SCAS-R Scale item	Factor loading				
	1	2	3	4	5
Q1 Building and maintaining relationships.		.659			
Q2 Managing my academic responsibilities.	.581				
Q3 Interacting at social events (e.g. party, school events)		.754			
Q4 Maintaining my hobbies and interests.					.414
Q5 Adapting to the noise level in my neighborhood.	.592				
Q6 Accurately interpreting and responding to other people's gestures and facial expressions.					.628
Q7 Working effectively with other students.	.500				
Q8 Obtaining community services, I require (e.g., to participate in volunteer activities, in a reforestation effort, in initiatives for collecting			.777		

Table 4. *Factor loadings for exploratory factor analysis of the SCAS-R in the total sample*

SCAS-R Scale item	Factor loading				
	1	2	3	4	5
food and medicines, in animal protection, in the political events of Greece).					
Q9 Adapting to the population density in Greece (that is, the number of people residing in Greece).	.546				
Q10 Understanding and speaking Greek.				.746	
Q11 Varying the rate of my speaking in a culturally appropriate manner.	.732				
Q12 Gaining feedback from other students to help improve my performance		.417	.432		
Q13 Accurately interpreting and responding to other people's emotions.					.461
Q14 Attending or participating in community activities (e.g., volunteering, attending a theatrical or musical performance, participating in a show).			.759		
Q15 Finding my way around.		.489		.449	
Q16 Interacting with members of the opposite sex.		.773			
Q17 Expressing my ideas to other students in a culturally appropriate manner.			.440		
Q18 Dealing with the bureaucracy (bureaucracy is the handling of administrative matters with public services, e.g., banks, Citizen Service Centers, tax offices, ministries).			.478		-.568
Q19 Adapting to the pace of life.	.630				
Q20 Reading and writing Greek.				.778	
Q21 Changing my behavior to suit social norms, rules, attitudes, beliefs, and customs.	.554				
Percentage of variability explained by each factor	25.8%	8.3%	7.5%	6.5%	5.5%

Table 5. *Reliability analysis of the SCAS-R for the item factors based on the theoretical distribution of questions in the total sample*

Item Factors Based on the Theoretical Distribution		Cronbach's alpha		
	Items	Total	Natives	Immigrants
Interpersonal Communication	1,3,6,11,13,16,21	.72	.70	.74
Academic Performance	2,7,12,17	.66	.68	.70
Personal Interests & Community Involvement	4,8,14,18	.54	.52	.62
Ecological Adaptation	5,9,15,19	.44	.44	.45
Language Proficiency	10,20	.73	.64	.92

T-test statistic results

Independent samples t – test statistics (Levene's test was used to assess the equality of variances between the two groups) and Mann-Whitney tests were conducted to test the relationship between continuous (quantitative) variables, between natives and immigrants. The quantitative data are presented by mean (M) and standard deviation (SD). The normality of the data was investigated using the Kolmogorov-Smirnov test, as shown in the 'statistic' column, with 259 and 121 degrees of freedom for native and immigrant adolescents, respectively. Additionally, the normality assumption was assessed using z-scores of skewness and kurtosis, with absolute values below 2 indicating that the normality assumption is acceptable (George & Mallery, 2016). The Mann-Whitney test was used for all comparisons, though it was only necessary when the normality assumption was not met. Both the Mann-Whitney and t-tests produced similar results. The only difference was for the variable 'flourishing,' there was a statistically significant difference between the two groups at a 10% significance level using the Mann-Whitney test.

Table 6. *Cronbach alpha reliability results*

	Number of Items	Cronbach α
Motives for using SNS		
Entertainment	5	.78
Escape	3	.64
Communication	5	.51
Affect	6	.76
Companionship	8	.71
Information	5	.74
Nostalgia-Sense of Belonging	4	.60
SCAS-R	21	.84
Flourishing	8	.85
Self-Efficacy	15	.86
Loneliness	3	.81
Nostalgia	7	.85

Native children in comparison to immigrant children depicted significant statistical differences in relation to Flourishing ($p = .035$, *Cohen's d* = 0.219, Statistical *Power* = .509), Loneliness ($p = .024$, *Cohen's d* =0.248, Statistical *Power* = .612), Escape ($p = .012$, *Cohen's d* = 0.284, Statistical *Power* = .729), Affect ($p = .009$,

Cohen's d = 0.294, Statistical *Power* = .759) and Nostalgia-Sense of Belonging (*p* < .000, *Cohen's d* = 0.744, Statistical *Power* = .999) (Cohen's d: effect size, 0.2-0.5 small effect size, 0.5-0.8 medium effect size, 0.8+ large effect size). Also, according to Cohen's d effect size all the statistically significant differences presented small effect size. The only exception was in the case of Nostalgia-Sense of Belonging where the effect size was medium. As far as the statistical power (G*power analysis) of the differences it can be seen that in the case of Escape and Communication is marginal below the acceptable threshold of 0.8 and in the case of Nostalgia – Sense of Belonging is above this threshold. However, in the case of Flourishing, Loneliness and Nostalgia the power of the difference is below 0.8 which means that in future research it is necessary to confirm these differences. In specific, natives, compared to immigrants, had significant higher score in Flourishing, Loneliness and Escape, and significant lower score in Affect and Nostalgia-Sense of Belonging (Table 7).

Correlations for study variables

The Pearson correlation coefficient (*r*) and Spearman's rho were used to measure the correlations between the variables. In the text, the Pearson correlation values are presented, and the two tests produced similar results. SCAS-R was positively correlated with Flourishing (r = .464, *p* < .01), Self-Efficacy (r = .346, *p* < .01), Loneliness (r = .462, *p* < .01), motive of Communication (r = .217, *p* < .01) and motive of Information (r = .211, *p* < .01). Also, there was a positive correlation between Flourishing and Self-Efficacy (r = .510, *p* < .01) and Loneliness (r = .588, *p* < .01). Negative correlation was found between Flourishing and the motive of Escape (r = -.268, *p* < .01). Lastly, there was a positive correlation between Self-Efficacy and Loneliness (r = .334, *p* < .001), and between Nostalgia and the motive of Affect (r = .224, *p* < .01) (Table 8). For the lower level of correlation (*r* = .217), the power of the analysis was equal to .989. For higher correlation values, the power of the analysis converges approximately to 1.

Results of the structural model analysis

Model of the relationships among motives for using SNS, SCA, the mediating and moderating variables. Figure 1 shows the results of the first structural model analysis. The final path model of the relationships among the main variables and the process of testing the mediating effects of Self-Efficacy, Loneliness and Nostalgia, and the moderating effect of Origin between SNS motives and SCA are presented. The model evaluation through the goodness-of-fit indices was performed before explaining the results of SEM. The model demonstrated a good fit to the data. The chi-square/degrees of freedom ratio was 106.776/32 = 3.337 (p < .001), which was marginally above the recommended value of 3. The other indices, NFI = 0.977, RFI = 0.925, IFI = 0.984, TLI = 0.947, and CFI = 0.984, were all above the acceptable threshold of 0.900. Additionally, the RMSEA index was 0.079, which is below the desired maximum value of 0.08.

SCA was significantly affected by Self-Efficacy (β = .248, *p* < .001), Loneliness (β = .330, *p* < .001), Nostalgia (β = .076, *p* = .057 at 10% statistical significance level), and by the motives of Entertainment (β = -.719, *p* < .001) and Communication (β = .535, *p* < .001). Self-Efficacy was significantly affected by the motives of Communication (β = .161, *p* < .01), Companionship (β = -.231, *p* < .001), Information (β = .151, *p* < .01) and Nostalgia-Sense of Belonging (β = -.108, *p* < .05).

Figure 1. *Model among motives for using SNS, SCA, the mediating and moderating variables*
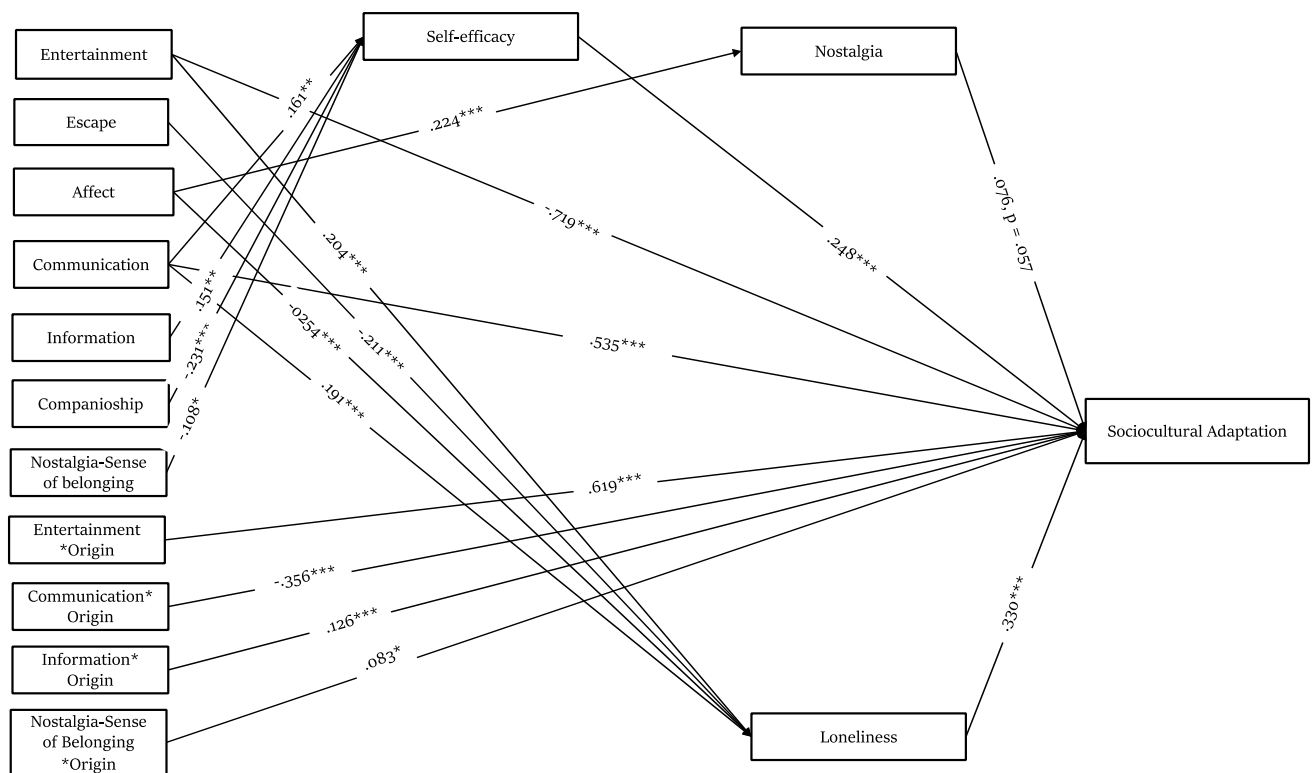
Note. * *p* < .05, ** *p* < .01, ***p* < .001.

Loneliness was significantly affected by the motives of Entertainment (β = .204, *p* < .001), Escape (β = -.211, *p* < .001), Communication (β = .191, *p* < .001) and Affect (β = -.254, *p* < .001). Nostalgia was significantly affected by the motive of Affect (β = .224, *p* < .001).

Finally, Origin moderated the association between SCA and the motives of Entertainment (β = 0.619, *p* < .001), Communication (β = -.356, *p* < .001), Information (β = .126, *p* < .001) and Nostalgia-Sense of Belonging (β = .083, *p* < .05). Specifically, immigrants, compared to natives, showed a lower level of SCA in the case of the motive of Communication. However, the motives of Entertainment, Information and Nostalgia-Sense of Belonging, immigrants, compared to natives, presented a higher level of SCA.

Table 9 shows the overall direct effects, table 10 shows the overall indirect effects and table 11 shows the moderation of Origin of the first model.

Model of the relationships among motives for using SNS, flourishing, the mediating and moderating variables. Figure 2 shows the results of the second structural model analysis. The final path model of the relationships among the main variables and the process of testing the mediating effects of Self-Efficacy, Loneliness and Nostalgia, and the moderating effect of Origin between SNS Motives and Flourishing are presented. The model evaluation through the goodness-of-fit indices was performed before explaining the results of SEM. The model had a good fit to the data, with a chi-square/df ratio of 102.835/30 = 3.428, *p* < .001, which was marginally above the recommended value of 3. The other fit indices, NFI = 0.974, RFI = 0.933, IFI = 0.981, TLI = 0.951, and CFI = 0.981, were all above the acceptable threshold of 0.900. Additionally, the RMSEA index = 0.080 was close to the recommended value of 0.08.

Table 7 *Normality test and differences between natives and immigrants on scale scores*

	M	SD	Statistic (259/121)	p	Zscore of skewness	Z score of Kurtosis	F /U	p	t	df	p
Natives											
SCAS-R	3.9	0.4	.055	.055	-4.8	7.9	.430	.512	1.629	378	.104
Flourishing	45.9	6.8	.138	.000	-7.0	3.8	3.770	.053	2.121	378	.035
Self-efficacy	2.8	0.5	.063	.014	1.2	1.4	.036	.851	1.694	378	.091
Loneliness	12.8	2.5	.228	.000	-8.3	3.4	1.428	.233	2.262	378	.024
Nostalgia	4.5	1.0	.053	.080	-1.2	-1.7	1.088	.298	-2.380	378	.018
Motives of SNS											
Entertainment	18.7	3.9	.089	.000	-2.9	-0.9	.094	.760	1.267	378	.206
Escape	9.2	3.1	.099	.000	0.5	-2.4	14.087	.000	2.520	286.869	.012
Communication	18.4	3.3	.103	.000	-2.4	-1.1	.061	.805	-.139	378	.889
Affect	15.9	4.6	.089	.000	2.4	-0.7	.707	.401	-2.613	378	.009
Companionship	22.3	5.6	.043	.200	-0.2	-1.7	.743	.389	-.049	378	.961
Information	15.1	4.3	.064	.011	0.8	-1.7	10.335	.001	-.560	281.602	.576
Nostalgia-Sense of Belonging	11.4	3.6	.091	.000	0.4	-2.7	15.054	.000	-7.297	290.368	.000
Immigrants											
SCAS-R	3.8	0.5	.152	.000	-1.1	0.0	**14143.500**	**.126**			
Flourishing	44.1	9.4	.179	.000	-9.0	11.2	**14030.000**	**.100**			
Self-efficacy	2.7	0.5	.110	.001	-3.5	4.2	**14649.500**	**.306**			
Loneliness	12.1	3.1	.189	.000	-7.0	4.6	**13617.000**	**.036**			
Nostalgia	4.7	1.0	.070	.200	-1.1	-1.0	**13378.500**	**.022**			
Motives of SNS											
Entertainment	18.2	4.3	.118	.000	-4.3	2.1	**14836.500**	**.402**			
Escape	8.4	2.5	.148	.000	3.2	1.8	**13265.500**	**.015**			
Communication	18.5	3.3	.111	.001	-2.7	-0.1	**15434.000**	**.813**			
Affect	17.3	4.9	.068	.200	0.3	-0.7	**13035.500**	**.008**			
Companionship	22.4	6	.087	.026	-0.7	-1.3	**15512.500**	**.875**			
Information	15.3	3.5	.129	.000	-0.1	1.4	**14925.000**	**.454**			
Nostalgia-Sense of Belonging	13.8	2.8	.117	.000	1.5	-0.4	**9589.000**	**.000**			

Note. The bold values represent the Mann-Whitney test (U); F: Levene's test; t: t-test for independent samples; df: degrees of freedom

Table 8. *Correlations for study variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Motive of Entertainment	-	.512**	.326**	.204**	.511**	-.077	-.013	.158**	.043	.078	.148**	-.067
2. Motive of Escape	.521**	-	.219**	.224**	.442**	-.212**	.048	.005	-.200**	-.152**	.151**	-.170**
3. Motive of Communication	.352**	.224**	-	.488**	.454**	.129*	.335**	.191**	.038	.083	.161**	-.005
4. Motive of Affect	.210**	.281**	.482**	-	.540**	.286**	.319**	.153**	-.041	-.117*	.236**	-.115*
5. Motive of Companionship	.531**	.472**	.488**	.562**	-	.024	.114*	.084	-.115*	-.110*	.119*	-.183**
6. Motive of Information	-.074	-.211**	.147**	.287**	.04	-	.146**	.192**	.132*	.043	.100	.129*
7. Motive of Nostalgia-Sense of Belonging	.002	.036	.340**	.295**	.129*	.169**	-	.118*	-.009	.050	.048	-.048
8. SCA	.165**	-0.013	.217**	.137**	.118*	.211**	.142**	-	.453**	.392**	.119*	.309**
9. Flourishing	-.011	-.268**	.006	-.135**	-.196**	.153**	-.039	.464**	-	.508**	.112*	.483**
10. Loneliness	.108*	-.133**	.093	-.178**	-.096	.049	.058	.462**	.588**	-	.031	.328**
11. Nostalgia	.148**	.145**	.148**	.224**	.128*	.078	.058	.117*	.047	-.033	-	-.025
12. Self-Efficacy	-.051	-.141**	.034	-.057	-.161**	.148**	-.057	.346**	.510**	.334**	-.032	-

Note. ** $p < .01$, * $p < .05$, below the diagonal the values of Pearson index are depicted and the values above the diagonal depict the Spearman's Rho index.

Table 9. *Overall presentation of direct effects of the first model*

Independent variable	Direct effect	Dependent variable
Communication	+	SCA
Entertainment	-	SCA

Note. The sign in the second column indicates how the independent variable affects the dependent variable. The sign + indicates positive effect while the sign – indicates negative effect.

Table 10. *Overall presentation of indirect effects of the first model*

Independent variable	Effect	Mediator	Effect	Dependent variable
Communication	+	Self-efficacy	+	SCA
Companionship	-	Self-efficacy	+	SCA
Information	+	Self-efficacy	+	SCA
Nostalgia - Sense of belonging	-	Self-efficacy	+	SCA
Affect	+	Nostalgia	+	SCA
Entertainment	+	Loneliness	+	SCA
Escape	-	Loneliness	+	SCA
Communication	+	Loneliness	+	SCA
Affect	-	Loneliness	+	SCA

Note. The sign in the second column from the left indicates how the independent variable affects the mediating variable, while the sign in the fourth column indicates how the mediating variable affects SCA. The sign + indicates positive effect while the sign – indicates negative effect.

Table 11. *Overall presentation of moderation results of the first model*

Independent variable	Moderator	Effect	Dependent variable
Entertainment	Origin	+	SCA
Communication	Origin	-	SCA
Information	Origin	+	SCA
Nostalgia - Sense of Belonging	Origin	+	SCA

Note. The sign in the third column indicates how the interaction between origin (0 = natives, 1 = immigrants) and the independent variable affects SCA. The sign + indicates positive effect while the sign – indicates negative effect.

Flourishing was significantly affected directly by Self-Efficacy (β = .326, p < .001), Loneliness (β = .434, p < .001) and Nostalgia (β = .095, p < .01). Also, Information had a direct effect on Self-efficacy (β = .148, p < .01). Loneliness was significantly affected directly by Entertainment (b = 0.204, p < .001), Escape (β = -.211, p < .001), Communication (β = .191, p < .001), and Affect (β = -.254, p < .001). Further, Affect had a direct effect on Nostalgia (β = .224, p < .001).

Finally, Origin moderated the association between Flourishing and Entertainment (β = 0.085, p < .05), Escape (β = -.158, p < .001) and Companionship (β = -.066, p < .05). Specifically, immigrants, compared to natives, showed a lower level of Flourishing in the case of Escape and Companionship. In the case of the

motive for Entertainment, immigrants presented a higher level of Flourishing, compared to natives.

Table 12 shows the overall indirect effects and table 13 shows the moderation of Origin of the second model.

Figure 2. *Model among motives for using SNS, Flourishing (PsyA), the mediating and moderating variables*
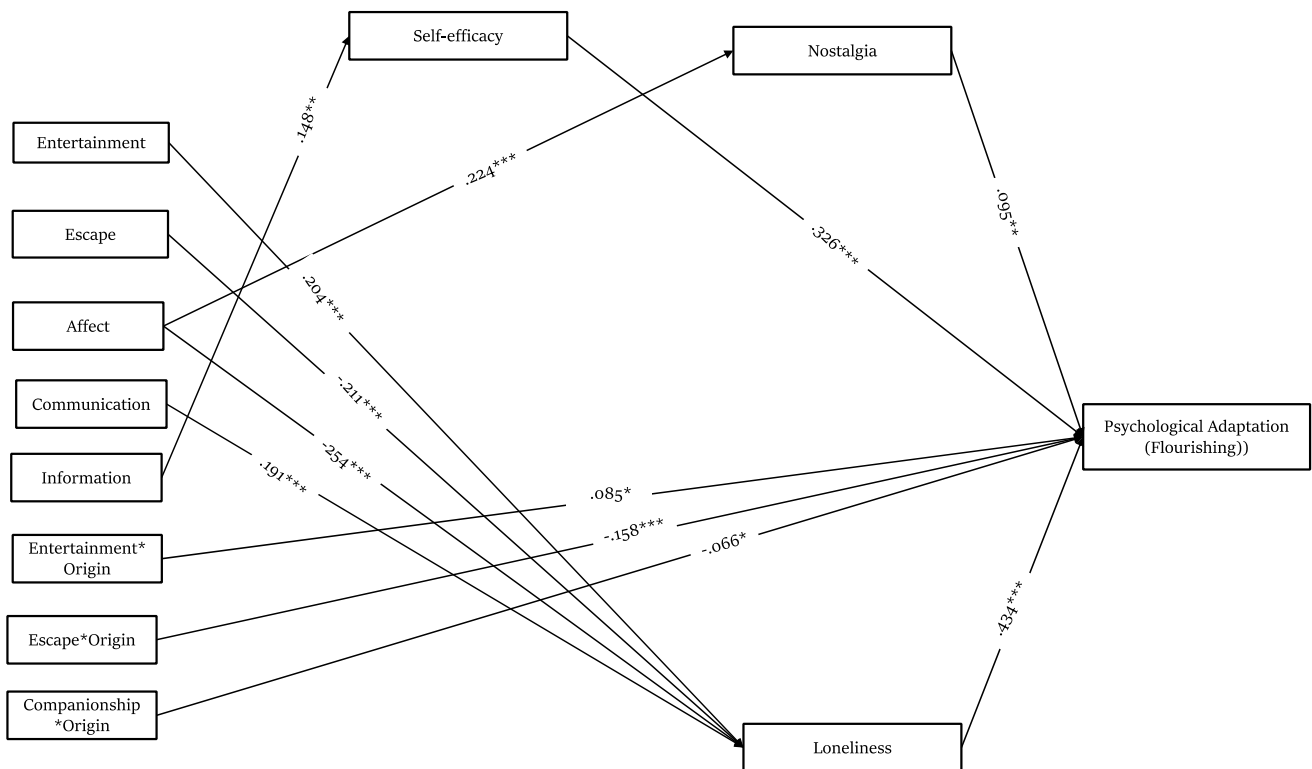
Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 12. *Overall presentation of indirect effects of the second model*

Independent variable	Effect	Mediator	Effect	Dependent variable
Entertainment	+	Loneliness	+	PsyA (Flourishing)
Escape	-	Loneliness	+	PsyA (Flourishing)
Communication	+	Loneliness	+	PsyA (Flourishing)
Affect	-	Loneliness	+	PsyA (Flourishing)
Information	+	Self-efficacy	+	PsyA (Flourishing)
Affect	+	Nostalgia	+	PsyA (Flourishing)

Note. The sign in the second column from the left indicates how the independent variable affects the mediating variable, while the sign in the fourth column indicates how the mediating variable affects PsyA. The sign + indicates positive effect while the sign – indicates negative effect.

Table 13. *Overall presentation of moderation results of the second model*

Independent variable	Moderator	Effect	Dependent variable
Entertainment	Origin	+	PsyA (Flourishing)
Escape	Origin	-	PsyA (Flourishing)
Companionship	Origin	-	PsyA (Flourishing)

Note. The sign in the third column indicates how the interaction between origin (0 = natives, 1 = immigrants) and the independent variable affects PsyA. The sign + indicates positive effect while the sign – indicates negative effect.

Discussion

Although research on SNS motives is extensive, the relationship between SNS motives and well-being has been less explored (Yang et al., 2021). The purpose of the present study was to investigate the effect of SNS motives on the PsyA and SCA of adolescents, both natives and immigrants. In addition, the study examined the mediating roles of self-efficacy, loneliness, and nostalgia, as well as the moderating role of origin (natives vs. immigrants) in these relationships.

The research confirms that SNS use has both positive and negative effects on mental health (e.g., Yin et al., 2019), emphasizing that SNS motives play a critical role in determining adolescents' adaptation outcomes. At the same time, findings show a lack of significant differences between immigrant and native adolescents in terms of adaptation related to SNS use. Part of the literature claims that immigrant adolescents in Europe adapt successfully to their new society (Dimitrova et al., 2017), with immigrants showing comparable levels of adaptation to natives. Well-adapted immigrants often develop a bicultural identity, which allows them to maintain a connection to their cultural heritage while also embracing the norms and values of the new society. This balance enables them to navigate both cultural contexts with greater ease. Moreover, adolescents—regardless of cultural background—are part of a generation that has grown up with technology and social media. SNS can provide similar opportunities for both immigrants and native adolescents to build and maintain relationships. These platforms serve as spaces for social interaction, emotional support, and identity exploration, benefiting both groups.

Moreover, the mediating roles of self-efficacy, loneliness, and nostalgia were confirmed, while the moderating role of origin was partially supported. The discussion is organized into two sections: SCA and PsyA each addressing both direct and indirect effects.

Sociocultural adaptation

SCA was significantly influenced by SNS motives, affecting adolescents' ability to integrate and interact within their social environments.

Direct effects. Communication through SNS was found to directly and positively affect SCA. Furthermore, origin moderated the relationship between communication and SCA, with immigrants, compared to natives, showing a lower level of adaptation. Specifically, communication through SNS strengthens ties and facilitates the flow of information and available resources among immigrants (Cingel et al., 2019). Communication with family and friends from the country of origin, through SNS, strengthens social and emotional support (Hofhuis et al., 2019), reinforces ties with the country of origin (Durham, 2004), and fosters a sense of belonging to the in-group (Croucher & Rahmani, 2015). At the same time, the use of SNS among adolescent immigrants affects adaptation processes and socialization with classmates, as well as within the broader school context (Kumi-Yeboah et al., 2019) and the larger society (Hofhuis et al., 2019).

Entertainment motive had a direct negative effect on SCA. Although entertainment is the primary motive for using SNS among young people (Al-Dwaikat et al., 2020), the research findings on the effect of this motive on users are not consistent (Yang et al., 2021). Several studies confirm a positive correlation between entertainment and stress (e.g., Al-Dwaikat et al., 2020), while others report a positive link between entertainment and well-being (e.g., Liu et al., 2019). In the present research, and in contrast to some studies (e.g., Pertegal et al., 2019), the finding that entertainment had a negative effect on SCA may be related to the fact that SNS do not allow for the in-person development of social and communication skills. This negative impact may be due to SNS use for entertainment often failing to facilitate real-world social skills or face-to-

face communication, thus hindering adolescents' ability to integrate into their social environments. This finding contrasts with research that emphasizes entertainment as a stress-reliever but supports the idea that virtual entertainment may limit opportunities for social learning (Pertegal et al., 2019). Moreover, it was found that origin moderated the relationship between entertainment and SCA, with immigrants, compared to natives, showing better adaption. Immigrants may be less inclined to use social media purely for passive entertainment and more for networking and integration purposes, thus showing better adaptation outcomes. Lastly, immigrant adolescents may also use entertainment content, such as TV shows, movies, and music on SNS, as a way to learn about and adapt to their host culture, enhancing their cultural learning and thus their adaptation, whereas natives might use SNS purely for leisure.

Indirect effects. The use of SNS for affect had an indirect positive effect on SCA through nostalgia and an indirect negative effect through loneliness. Adolescents who used SNS to meet their emotional needs experienced less loneliness, which was associated with lower adaptation. The use of SNS for emotional connection may reduce loneliness, allowing adolescents to avoid deeper self-reflection that could be achieved through loneliness. As a result, they might not develop the emotional resilience or self-knowledge necessary for navigating complex social and cultural environments, which are essential for SCA. This reduced self-reflection can limit their ability to confront challenges and learn from them, which are key components of adaptation. On the other hand, affect positively influenced SCA when mediated by nostalgia. Nostalgia has been shown to foster a sense of belonging and emotional continuity, which can positively affect SCA, particularly for adolescents who use SNS to connect with their past (Sedikides et al., 2016).

The present findings also support that using SNS for companionship reasons directly reduced self-efficacy, which in turn negatively affected SCA. Adolescents who relie on SNS for companionship may experience reduced social and communication skills, limiting their ability to effectively navigate real-world social contexts. Similarly, connecting with peers or friends has been found to be related to self-esteem and mood, reduced anxiety, and facilitated social interaction and friendship (Wong & Csikszentmihalyi, 1991). Rook (1987) argues that companionship is the strongest affector of social satisfaction. At the same time, self-efficacy acts as a protective mechanism against psychosocial problems, helping the individual to reduce stress and manage difficulties in a more sufficient way (Stetz et al., 2006). The findings of the present research showed that in the case of internet, the motive of companionship reduced self-efficacy and negatively affected adaptation. The concept of companionship in vivo is significantly different from companionship achieved remotely, via the internet. Although the motive of companionship in SNS enables the individual to expand and strengthen their social network, contact friends who live far away, and meet others with whom he/she shares common interests (Zolkepli & Kamarulzaman, 2015), the fact that this is achieved remotely appears to reduce social and communication skills, as well as self-efficacy. Even though young users can reach peers directly and frequently through the internet and enhance social support, demands, and expectations for maintaining these relationships are increasing (Steele et al., 2020). As teenagers are highly seeking connections and acceptance, they may use SNS as a means of social participation, possibly increasing anxiety and fear of missing out (Oberst et al., 2017).

Regarding the motive of entertainment, it was found to indirectly and positively affect SCA through loneliness. Although loneliness is often viewed as a negative factor in psychological development, in this context, it acted as a catalyst for better SCA. The constructive role of loneliness in the emotional development of adolescents aligns with the viewpoints of several scholars (e.g., Galanaki, 2013), who argue that loneliness can be a valuable tool for personal reflection and growth. It plays a critical role in fostering healthy, high-quality relationships by encouraging self-awareness and life management skills (Buchholz, 1997), as well as

promoting self-reflection and emotional maturity.

It was also found that the motive of communication had a direct positive effect of SCA through self-efficacy and loneliness. Adolescents may develop social skills and confidence by interacting with others in various social contexts, which can enhance their social self-efficacy. Increased self-efficacy contributes to SCA by enabling adolescents to engage more confidently in real-world social situations, learn cultural norms, and interact successfully with others in their environment. SNS improve interactive and collaborative learning (Al-Rahmi et al., 2015) and influence the social and academic adaptation of immigrant adolescents (Forbush & Foucault-Welles, 2016). Moreover, through SNS, adolescents enhance intercultural competence and more easily develop relationships with teachers, classmates, and the broader network of people who facilitate acculturation processes (Kumi-Yeboah et al., 2019), strengthening their sense of belonging and social support. At the same time, loneliness seems to act as a positive developmental tool, playing a crucial role in fostering self-reflection, emotional growth, identity formation, and the motivation to engage with new social and cultural experiences, and thus promoting SCA.

Moreover, the motive of escape had an indirect negative impact on SCA through loneliness. Adolescents who turned to SNS to avoid real-life issues experienced decreased loneliness, which impeded their ability to integrate into broader society. In the context of the web, digital media create an environment in which users can temporarily forget about everyday real-life problems and anxieties (Orchard et al., 2014). The present findings are consistent with prior research that associates escape motives with avoidance behaviors and negative adaptation outcomes (eg., Goh et al., 2019).

The use of SNS for informational purposes positively predicted SCA through self-efficacy. Origin moderated this relationship, with immigrant adolescents showing a higher level of SCA compared to natives. These findings are consistent with existing literature, which suggests that using SNS for informational purposes helps young individuals adapt more effectively (Hashim et al., 2016). Through SNS, immigrants can recognize stereotypes and prejudices in the host society, broadening their perceptions and ultimately enhancing their adaptation (Sawyer & Chen, 2012). Additionally, access to information improves adolescents' self-efficacy, enabling immigrants to form a positive connection with their country of origin. SNS also allow migrants to stay informed about events in the host country (Canhilal et al., 2020), reducing uncertainty and easing the challenges of interacting with a different culture (Smith & Bond, 1999).

Lastly, the motive of nostalgia-sense of belonging had an indirect negative effect on SCA through self-efficacy. Specifically, the motive of nostalgia-sense of belonging negatively affected SCA through self-efficacy, with immigrants being better adapted compared to natives. Adolescents who experience adaptation difficulties or have low self-efficacy may have turned to SNS for nostalgia-driven reasons to fulfill their need for belonging to a group. In other words, they may seek contact with others to cope with stressful stimuli. For immigrants, SNS strengthen ties with their country of origin and reinforce their sense of belonging to it (Sawyer & Chen, 2012). In fact, Hendrickson, Rosen, and Aune (2011) argue that frequent contact with people from the country of origin can increase feelings of nostalgia for the homeland, with images and messages evoking memories of life there, to the extent that it can intensify psychological isolation and hinder successful adaptation to the new society. Similarly, Komito and Bates (2009) suggest that contact with compatriots may slow down integration into the host society, as the need to establish new friendships and social connections in the new country is reduced. Adolescents tend to stay connected with people who are not physically present (an imagined group of reference) to affirm their belonging to the group associated with their home country (Vorderer et al., 2016).

Psychological adaptation

This study highlighted that the impact of SNS use on PsyA (flourishing) is both positive and negative, with different motives influencing PsyA through indirect pathways.

Direct effects. None of the independent variables were found to have a direct effect on PsyA (flourishing).

Indirect effects. The SNS motives had indirect effects on PsyA , through the mediating variables of loneliness, nostalgia, and self-efficacy. Firstly, the motive of communication indirectly and positively affected PsyA through loneliness. Communication through SNS enhances young users' social networks and mental health well-being (Chang et al., 2014). Social connectedness is particularly important for adolescents' mental well-being and emotional regulation (Zeidner et al., 2016), as it provides social support, which acts as a protective mechanism against stressful stimuli (Rueger et al., 2016).

The results also showed that the escape motive had an indirect negative effect on PsyA through loneliness, with immigrants, compared to natives, showing lower levels of adaptation. Previous studies have linked the escape motive with problematic social media use (e.g., Kırcaburun & Griffiths, 2019). Adolescents who use SNS to escape from problems and distressing situations may exhibit avoidance behaviors that hinder emotional regulation and coping mechanisms. Through escape, individuals may attempt to avoid or distract themselves from problems (Young et al., 2017).

Also, the results show the positive effect of loneliness on adaptation. Existential loneliness contributes to adolescent development by deepening self-connection and fostering a sense of inner peace and balance (Moustakas, 1972). During adolescence, loneliness may represent an important developmental requirement, the fulfillment of which can enhance psychological well-being. Adolescents increasingly develop a positive outlook on loneliness (Danneel et al., 2018), as growing independence allows them to appreciate its benefits rather than fear it (Corsano et al., 2006). As a result, they learn to manage alone time more effectively (Long & Averill, 2003), perceiving it as a valuable opportunity for contemplation and internal growth, especially in managing stress (Moustakas, 1972).

It was also found that entertainment positively affected loneliness, which, in turn, had a positive effect on adaptation. While much of the literature has focused on the negative impacts of loneliness on psychosocial development, several studies have confirmed that loneliness can have beneficial effects during adolescence (e.g., Danneel et al., 2018). For instance, loneliness can foster self-reflection and emotional growth, which may contribute to better adaptation outcomes. Furthermore, immigrant adolescents demonstrated better adaptation compared to natives when using SNS for entertainment purposes. This aligns with the immigrant advantage theory, often referred to as the 'paradox of immigration,' which suggests that despite facing acculturation stress and frequent shortages of economic and social resources, young immigrants exhibit fewer problematic behaviors (e.g., Salas-Wright et al., 2016). However, a substantial body of research also indicates that life satisfaction tends to be higher among natives compared to immigrants (e.g., Arpino & de Valk, 2018), likely due to better access to resources and greater social stability.

Moreover, it was found that the use of SNS for affect had an indirect positive effect on PsyA through nostalgia and an indirect negative effect through loneliness. Adolescents who used SNS to meet their emotional needs experienced less loneliness, which was associated with lower PsyA. However, affect positively influenced adaptation when mediated by nostalgia. Nostalgia acts as a mechanism that provides a sense of personal meaning in life (Routledge et al., 2011). Personal meaning plays a crucial role in an individual's

developmental lifespan (Ryan & Deci, 2001) and affects adaptation (Deci & Ryan, 2000). Nostalgia has been shown to facilitate psychological well-being across the adult lifespan (Hepper et al., 2020). It serves as a reservoir for positive affect (Sedikides et al., 2009), stimulating positive emotions, enhancing self-image (Vess et al., 2012), and increasing feelings of optimism (Cheung et al., 2013). Additionally, nostalgia boosts self-esteem, inspiration, and goal setting (Sedikides et al., 2008). An increase in self-esteem, in turn, reduces anxiety and promotes better psychological well-being (Swann et al., 2007). In conclusion, since all these variables pertain to the psychological aspects of adaptation (Ward et al., 2001), the positive impact of nostalgia on immigrants' PsyA is confirmed. In line with our findings, the literature asserts that immigrants use SNS as a means of emotional support (Canhilal et al., 2020; Sedikides et al., 2016). SNS enable immigrant teenagers to establish and maintain ties with friends and relatives transnationally (Cingel et al., 2019). Hofhuis, Hanke, and Rutten (2019) found that immigrants who maintain more contact with friends and family from their country of origin through SNS are more oriented toward their home country. Nostalgia fosters a sense of self-continuity by helping individuals perceive their life journey as a continuous social narrative, rather than as a series of isolated events (Landau et al., 2010).

Regarding the motive of companionship, it was found that immigrants, compared to natives, showed lower levels of PsyA when using SNS for companionship purposes. When immigrants use SNS for companionship, they may be seeking emotional connection and support. However, the nature of online interactions tends to be more superficial compared to face-to-face interactions (Valkenburg & Peter, 2009). Online interactions are often regarded as less personal and emotionally fulfilling compared to in-person interactions with close friends (Scott et al., 2022), which can negatively impact PsyA. While native adolescents may have more robust offline social support networks, immigrants may rely more heavily on SNS, which may not provide the same psychological benefits.

Moreover, it was found that the motive of information positively affected PsyA, through self-efficacy. Using SNS for informational purposes enables adolescents to access a diverse array of resources, including educational content, social support systems, and insights into social norms and current events. These resources are essential for promoting PsyA. Seeking information through online platforms enhances self-efficacy in adolescents by empowering them to take charge of their own learning and problem-solving processes (Colditz et al., 2018). The capacity to independently locate and evaluate information is essential for fostering autonomy, which is a crucial developmental milestone during adolescence (Bandura, 1997).

In conclusion, the study underscores the complex role of SNS in the SCA and PsyA of adolescents, particularly when considering direct and indirect effects of SNS motives, and the moderating role of origin. While SNS can facilitate both cultural adaptation and emotional well-being, its impact varies significantly based on the motivations driving its use.

Limitations and suggestions for further study

While this study provides meaningful insights into how SNS influence the SCA and PsyA of adolescents, several limitations should be noted. Addressing these limitations in future research will help to better understand the nuanced relationship between SNS use and adaptation.

One of the primary limitations is the geographic and sample scope. The study was conducted in the Attica region of Greece, which limits the generalizability of the findings to other regions and cultural contexts. Future studies should include larger, more diverse samples, encompassing a variety of cultural backgrounds, to provide a more comprehensive understanding of how SNS impacts adaptation across different environments (Smith, 2018).

Also, the study utilized a cross-sectional design, providing a snapshot of the relationships between variables at a single point in time. However, this design limits the ability to infer causality regarding the long-term effects of SNS use on adaptation. For instance, it is uncertain whether SNS use leads to better adaptation or if adolescents who are already well-adapted are more likely to engage in certain SNS activities. Cross-sectional studies can demonstrate associations between variables but cannot confirm causal pathways. In mediation analysis, researchers should interpret results cautiously, acknowledging that alternative models or reverse causality could explain the findings (Hayes, 2013). To address this limitation, future research should adopt a longitudinal approach to monitor changes in SNS use and adaptation over time, enabling stronger causal conclusions (Kraemer et al., 2000). Additionally, this approach would offer insights into how the role of SNS evolves as adolescents mature and their social and cultural contexts shift.

By addressing these limitations and suggestions, future studies will be better positioned to fully understand the complex role that SNS plays in the adaptation of native and immigrant adolescents across diverse cultural contexts.

Practical implications

The findings of this study provide several practical implications for educators, policymakers, and parents, particularly regarding the role of SNS in the adaptation of native and immigrant adolescents.

Customized interventions for SNS use. Considering the mixed impact of SNS on SCA and PsyA , it is crucial to design strategies that encourage positive engagement with these platforms. Educators and mental health practitioners should guide adolescents to use SNS primarily for communication and information-sharing, which have been shown to positively influence adaptation. On the other hand, excessive use of SNS for entertainment or escapism should be closely monitored, as these motives are linked to poorer adaptation. Schools could introduce digital literacy programs focused on promoting responsible online behavior, particularly in diverse classrooms that include both native and immigrant students.

Support for immigrant adolescents. This study reveals that immigrant adolescents encounter distinct challenges when using SNS. They tend to engage with SNS more frequently for nostalgia and entertainment purposes, which can sometimes facilitate adaptation but may also impede their integration into the broader society. As a result, schools and community organizations should focus on building support networks that foster in-person interactions between immigrant adolescents and peers from both their ethnic backgrounds and the host culture. Programs that promote cultural exchange and language learning can foster stronger connections between immigrant and native adolescents by leveraging both online platforms and in-person interactions.

Enhancing self-efficacy in adolescents. Self-efficacy emerged as a crucial factor in successful adaptation. Adolescents who were confident in their ability to handle social situations showed better adaptation to the host society and maintained psychological well-being. To strengthen self-efficacy, schools and parents should prioritize developing social skills through extracurricular activities, mentorship opportunities, and counseling programs (Varela et al., 2022). Additionally, involving adolescents in collaborative online learning environments can further boost their self-efficacy, helping them interact constructively with peers and improve their problem-solving skills (Keles et al., 2020).

Summary of findings and future directions

This study contributes important findings to the growing body of research on the effects of SNS on adolescent

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adaptation, both natives and immigrants. The motives for using SNS play a critical role in shaping adaptation, with different motives influence adaptation outcomes in various ways. Overall, the connection between SNS use and adaptation is multifaceted, influenced by both direct and indirect effects and the interaction of mediating and moderating factors.

In specific, the study demonstrates that SCA is strengthened when adolescents use SNS for communication and information, as these activities encourage social interaction and help develop intercultural skills. However, the study also found that using SNS primarily for entertainment may hinder adaptation by limiting real-life social engagement.

PsyA was strongly associated with self-efficacy, with adolescents who felt confident in their social abilities reporting higher levels of psychological well-being. On the other hand, using SNS as a means of escape was linked to poorer mental health, underscoring that SNS should not replace meaningful face-to-face interactions. For immigrant adolescents, nostalgia can serve as a positive coping mechanism.

In summary, this study emphasizes the importance of promoting healthy SNS use, particularly for immigrant adolescents, who may rely on SNS for emotional and cultural connections. Future research should further explore the long-term impacts of SNS use on adolescent adaptation, focusing on platform-specific behaviors and utilizing longitudinal studies for a deeper understanding of these processes.

Declaration of conflicting interests

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Ελληνική Ψυχολογική Εταιρεία
Hellenic Psychological Society

Η σχέση της χρήσης ιστοσελίδων κοινωνικής δικτύωσης με την ψυχολογική και κοινωνικοπολιτισμική προσαρμογή εφήβων γηγενών και μεταναστών

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ABSTRACT IN GREEK

Η παρούσα μελέτη διερευνά τη σχέση της χρήσης των Ιστοσελίδων Κοινωνικής Δικτύωσης (ΙΚΔ) με την ψυχολογική και κοινωνικοπολιτισμική προσαρμογή των γηγενών και μεταναστών εφήβων, εστιάζοντας στα κίνητρα χρήσης των ΙΚΔ. Το δείγμα αποτελούνταν από 380 εφήβους, από τους οποίους 259 ήταν γηγενείς Έλληνες και 121 μετανάστες, με μέσο όρο ηλικίας 14,4 έτη. Για τον έλεγχο των άμεσων και έμμεσων επιδράσεων των κινήτρων χρήσης ΙΚΔ στην προσαρμογή εφαρμόστηκε η στατιστική μεθοδολογία των Μοντέλων Δομικών Εξισώσεων. Περαιτέρω, διερευνήθηκε ο διαμεσολαβητικός ρόλος της αυτοαποτελεσματικότητας, της μοναξιάς και της νοσταλγίας και ο ρυθμιστικός ρόλος της καταγωγής (γηγενείς έναντι μεταναστών). Τα ευρήματα δείχνουν τόσο θετικές όσο και αρνητικές επιδράσεις της χρήσης των ΙΚΔ στην προσαρμογή των εφήβων. Τα κίνητρα της διασκέδασης και της επικοινωνίας είχαν διαφορετικά αποτελέσματα. Η διασκέδαση συνδέθηκε αρνητικά με την κοινωνικοπολιτισμική προσαρμογή αλλά θετικά με την ψυχολογική προσαρμογή μέσω αυξημένης μοναξιάς. Αντίθετα, η επικοινωνία συσχετίστηκε θετικά τόσο με την κοινωνικοπολιτισμική όσο και την ψυχολογική προσαρμογή, ιδιαίτερα μεταξύ των μεταναστών. Η διαφυγή βρέθηκε να συνδέεται αρνητικά με την προσαρμογή μέσω της μοναξιάς, υπογραμμίζοντας τις δυνητικά επιζήμιες επιδράσεις της χρήσης των ΙΚΔ για την αποφυγή του στρες. Επιπλέον, επιβεβαιώθηκε ο διαμεσολαβητικός ρόλος της αυτοαποτελεσματικότητας, της μοναξιάς και της νοσταλγίας, ενώ οι υποθέσεις που αφορούσαν το ρυθμιστικό ρόλο της καταγωγής επιβεβαιώθηκαν εν μέρει. Συγκεκριμένα, οι μετανάστες έδειξαν καλύτερη προσαρμογή όταν χρησιμοποιούσαν τις ΙΚΔ για επικοινωνία και διασκέδαση σε σύγκριση με τους γηγενείς. Τα ευρήματα υπογραμμίζουν την πολυπλοκότητα της χρήσης των ΙΚΔ και την πολυδιάστατη επίδρασή της στην ευημερία των εφήβων.