Implications of Technology Usage for Well-being and Mental Health in University Students: A Cross-cultural Comparison

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Thesis Abstract

New technology and social media continue to grow, and human beings seem to be more connected to each other currently than ever before. Students are continually online, connected to their social network sites (SNS), and they are the most avid users (Alzougool, 2018, Cohen et al., 2018). The literature shows contradictory and inconclusive results regarding the associations between technology usage, well-being, and mental health, compounded by the variety of measures used. A more nuanced assessment of technology and SNSs usage, such as users' perceptions, and the questions of how and why individuals engage with digital technology is important for making theoretical and empirical progress regarding the relationships between technology use, well-being, and mental health (Vannucci et al., 2017). Moreover, another factor that is important to consider and that plays a bidirectional and interactive effect on mental health is sleep (Vedaa et al., 2016). Several studies have reported associations between sleep problems, anxiety, and other mental health problems (Hussain & Griffiths, 2019). However, there is a lack of research examining the construct fear of missing out as a predictor of technology usage at night-time, and the associations between this usage, sleep difficulties, well-being, and anxiety. Therefore, this thesis' aims were to: (1) examine the relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours, and affective states in university students in three countries (Spain, UK and Turkey), and (2) to determine the possible mechanisms (social comparison, fear of missing out) that mediate and predict these relationships. To achieve the above aims, new measures were developed and validated across the three different cultures.

The current thesis developed new scales of well-being perceptions (8 items), anxiety perceptions (7 items) and social comparison (4 items) in relation to electronic devices and SNS usage (see appendix I). The first study of this thesis was formed by a pilot study *(N =*

27*)*, a focus group (*N* = 4), and a panel of experts (*N* = 3), that aimed to develop and enhance the content validity of the new measures. Moreover, the researcher assessed the cross-cultural measurement invariance of these new measures in three different countries UK (*N* = 121), Spain (*N* = 111), and Turkey (*N* = 221). These three studies are integrated through the thesis. Overall, the findings suggested that the new measures are well-suited to assess well-being, anxiety perceptions, and social comparison in relation to electronic devices and SNS usage in the three different countries. Findings offer an outstanding contribution in the scope of electronic devices and SNS usage, as the new measures can be used as reference points by researchers, practitioners and mental health professionals. Despite some notable differences across culture, there are remarkable similarities that provide confidence in the measures across divergent samples. The results found in this thesis suggest that social comparison as a construct specifically related to SNS usage assessed through the measure developed by the researcher is a key mechanism. Outcomes indicate that this measure mediates the relationships between perceptions of anxiety and satisfaction with life; between well-being perceptions and satisfaction with life; between well-being perceptions and loneliness; and between anxiety perceptions and trait anxiety. Finally, results from the last study of this thesis, *N* = 159 participants from UK, and *N* = 172 participants from Spain, revealed that fear of missing out is a predictor of night-time usage of electronic devices, and that this usage is a predictor of lower well-being levels, higher sleep problems and anxiety.

This thesis has given attention to solid theoretical perspectives such as the Social Comparison Theory (Festinger, 1954), Self-Determination Theory (Ryan & Deci, 2000), the interpersonal connection behaviours framework, and the stimulation and displacement hypothesis. Another strength of this thesis is that by checking at the measurement level, and at the structural level, the constructs' functionality has been shown. Furthermore, the cross-cultural nature of this thesis, has provided added value to the constructs. In addition, the

changing nature of SNS platforms, make examining the usage of these difficult in this area of research. Therefore, the development of measures that are focused on the specific context of SNS and electronic devices usage, but without the focus on a specific SNS, reduces the risk of obsolescence and adds a cross-time crucial advantage.

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Chapter 1- Introduction and Literature Review

Technology and Social Network Sites Usage

New technologies have changed the way that people live and communicate. Since this rapid growth of technology, researchers around the world have been interested in how this is affecting people.

Social media constitutes a broad term that includes a range of communication channels such as YouTube videos or Wikipedia entries. Within the social media sites is included the so-called social networks sites (SNSs). SNSs allow users to create and share personal profiles, content, and information (Verduyn et al., 2017). SNSs such as Facebook and Instagram are being used by billions of people around the world daily (Pew Research Center, 2019). Within the billions of users, the population that most frequently use these sites are young adults aged between 18 and 29 year olds (Alzougool, 2018, Cohen et al., 2018). Given this popularity of SNSs and new technology among the young population, researchers have been interested in how this usage is related to mental health. Therefore, a considerable amount of research in the past decade has been conducted in this area. Nevertheless, studies have found contradictory, inconsistent, and inconclusive results regarding the associations between technology usage, well-being, and mental health. Therefore, a primary goal behind this research project is to trace through the various strands of findings to ascertain the commonalities and differences between the spectrum of reported outcomes. This should provide more clarity on the direction in which future research should be carried forward.

Well-being and Mental Health

The psychological constructs well-being and mental health are related and very often used interchangeably (Galderisi et al., 2015). The World Health Organization (WHO) defines

mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2004, p. 13). Regarding well-being, a wide range of definitions exists in the literature. Some definitions of psychological well-being focus on positive mental health—such as positive affect or life satisfaction—while others focus on the absence of negative mental health outcomes such as anxiety, loneliness, or negative affect (Diener et al., 2010). In this project the researchers agreed with the perspective of other researchers like Burke and Kraut (2016) in using a broad view of the term psychological well-being. Therefore, we used multiple indicators of the construct such as: anxiety, loneliness, satisfaction with life, perceived social support, negative affect, and positive affect.

The well-being and mental health status of students at university is of growing concern. In the United Kingdom the prevalence rates of anxiety and other mental health problems in university students have been increasing in the past decade (Thorley, 2017). Moreover, internationally, levels of students' mental health problems also constitute a major concern due to increasing levels of prevalence since 2010 (Beiter et al., 2015). The factors that may trigger mental health problems in students maybe are the new challenges (including the use of technology), the pressure to succeed and the transition to adulthood (Andrews & Wilding, 2004). It should not be assumed that mere familiarity with technology will counter anxiety – for example students experience test anxiety even after long experience with tests. This is especially so once the idea of evaluation is introduced (Mcilroy et al., 2000). Evaluation or judgment from others relates not only to formal testing but may also relate to negative comments or dislikes on SNSs (Hoge et al., 2017; Lu et al., 2014).

Technology use and Well-being

As mentioned previously, literature shows inconsistent findings in the relationship between technology use and well-being. While numerous studies have found a negative relationship between digital technology use and well-being (Demirci et al., 2015; Kross et al., 2013; Lin et al., 2016; Twenge et al., 2018), others have found a positive or even a null relationship (Berryman et al., 2018; Jensen et al., 2019; Orben & Przybylski, 2019a, 2019b). Moreover, the associations found in the literature seem to depend on the examined indicator of mental health (Faelens et al., 2020). For instance, although the findings from the meta-analysis conducted by Huang (2017) support a negative association between SNS use and well-being ($r = -0.07$), the associations of this use with depression and loneliness were weak and negative. Furthermore, the associations with positive indicators of well-being such as life satisfaction were close to zero. In support of this, Yoon et al., (2019) found in a meta-analytic review a positive association between SNSs usage in terms of time spent on them and depressive symptoms.

The literature also shows that studies have focused on one or two of the components of well-being. For instance, Huang (2010) conducted a meta-analysis of 40 studies, in which 37 used loneliness as an indicator of well-being, 33 used depression, and 7 used life satisfaction. Other studies have used mood and loneliness (Kross et al., 2013; Verduyn et al., 2015) or perceived social support (Kraut et al., 1998; Ellison et al., 2007) as short-term measures. Nevertheless, results from the study conducted by Burke and Kraut (2016) supported the idea that online communications influence well-being when the construct is considered broadly with all its components. Furthermore, many studies in the literature focused on one or two SNSs, like Facebook or Instagram. In order to have a more comprehensive view in this area of research, Verduyn et al., (2017) reviewed the literature surrounding how social network sites usage influences subjective well-being. As reported in

their literature review, early studies focused on overall usage of social networks and subjective well-being. Nevertheless, more recent studies examined the relationship between social networks sites and this construct, but in a more granular approach, such as considering specific types of social networks' usage (Faelens et al., 2020; Matthes et al., 2020). Currently, different mechanisms underlying the relationship of interest are being examined. For example, social support and social comparisons have been frequently studied as mediators in the relationship between social networks sites and well-being (Verduyn et al., 2017). However, researchers need to examine continuously the consequences of technology, SNSs and applications usage for well-being because SNSs are changing continuously at a rapid pace (Verduyn et al., 2017).

Technology Usage and Anxiety

A growing body of research has demonstrated the relationship between the use of technology, specifically social technology (e.g., texting, instant messaging, e-mailing) and anxiety (Hoge et al., 2017). For instance, researchers have found that not receiving replies immediately after a message, the amount of text messaging and the feeling of being dependent on text messaging were associated with anxiety (Lu et al., 2014; Lu et al., 2011). Therefore, the constantly connected and always-online nature of digital devices can exacerbate feelings of anxiety (Harwood et al., 2014; Hoge et al., 2017). Moreover, there are other facets of technology that could cause anxiety. For instance, technology could contribute to an information overload because individuals are bombarded simultaneously with information from multiple electronic sources (Chen & Lee, 2013). In this thesis the concepts of moderators and mediators are important to elucidate the relationship between psychological constructs in the context of technology use. These variables are intermediate between predictor and outcome variables, and sometime show that they are the "third variable" that completely nullifies (mediates or moderates) the direct effect between the

predictor and criterion. On the other hand, they sometimes provide partial moderation or mediation between predictors and outcomes. In this case there are significant direct and indirect effects, and this enhances the relationship between predictors and outcomes as the intermediate variable serves as a significant covariate with the predictor (Baron & Kenny, 1986). Moderators are set out as categorical and often dichotomous variables that show the differences between predictor and outcomes according to the level of the moderator (e.g., could be whether participants use a given technology or not, or whether they use if in bed or not etc.). Moreover, mediators perform the same intermediate function as moderators except that they are measured at scale/continuous level and are often psychological constructs such as, in this study, social support.

The question of how the mediators and moderators in the relationship between technology use and anxiety/wellbeing functions across the various levels remains unclear and more research is needed to address this (Hoge et al., 2017). Thus, in the relationship between technology and anxiety/wellbeing, research needs a more detailed assessment of how and why individuals engage with technology to develop theoretical models and targeted interventions strategies (Vannuci et al., 2017).

Social Comparison in Social Network Sites

Research has shown that technology use increases negative social comparisons, such as believing that others have better lives and are happier (Chou & Edge, 2012), which may lead to symptoms of anxiety (Vannuci et al., 2017) and have negative influences on well-being (Gerson et al., 2016).

This finding about the social comparison mechanism that takes place in SNSs relies on Social Comparison Theory (Festinger, 1954). This theory sustains that individuals compare themselves with others to create their self-perceptions (Festinger, 1954). Because in

SNSs the information about others is available, they provide constant opportunities for social comparison (Clark et al., 2018). Based on Social Comparison Theory, researchers have established two types of social comparison: upward—comparing oneself with perceived superior others—, and downward—comparing oneself to perceived inferior others (Vogel et al., 2014). The type of social comparison that most frequently occurs in SNS is the upward because users tend to portray their successes more likely than their failures (Verduyn et al., 2020).

Discernibly, social comparison is prevalent across cultures. Moreover, even before the existence of SNSs people tended to impress others. However, the existence of SNSs have opened a window where people expose idealized images of themselves and an enormous amount of self-enhancing information (Verduyn et al., 2020; Vogel et al., 2014). As demonstrated by numerous studies, these comparisons result in decreases in subjective well-being (Haferkamp & Krämer, 2011; Sherlock, & Wagstaff, 2019). It is important to mention that these relationships seem to be unidirectional, with social comparison as the mediator between SNSs usage and decreased levels of well-being. A study conducted by Steers et al., (2014) found that Facebook usage was associated with more social comparison, which lead to higher levels of depression, which indicated the role of social comparison as a mediator. However, when level of depression was treated as the mediator, the model did not fit the data. Thus, this finding indicated that well-being should be the outcome variable.

The literature review shows conclusive findings regarding the mediating role of social comparison in the relationship between SNS and well-being. However, most of the studies have focused on one social network such as Facebook or Instagram. Moreover, social comparison has usually been measured through general scales of an individual's tendency to make social comparisons, for instance, the social comparison orientation scale (Gibbons and Buunk, 1999). The criticism around the usage of these measures to evaluate social

comparison is that social comparison orientation is not the actual behaviour; and although both are highly associated, social comparison orientation is a predictor of the behaviour (Chae, 2018). To overcome this gap, previous studies have evaluated the construct through single items measures. Specifically, Chae (2018) evaluated social comparison through social media with the item "how often, in the past 30 days, did you compare your life with that of your friends on social media?". Although single items measures have been proved to be valid in the measurement of several constructs (e.g., Cheung & Lucas, 2014), more refined measures of social comparison with a specific emphasis on SNSs are needed. Although the single item use approach has been demonstrably useful in surveys in order to reduce the volume of large surveys (Woods & Hampson, 2005), the approach is a shorthand method that does not capture the breadth of content validity that truly represents the underlying latent construct.

Research Evaluating Media and Technology Usage

In the evaluation of media and technology usage, research studies have used a variety of measurement tools. The criticisms surrounding these measurement tools focus on several issues: variety of methods that makes it difficult to make comparisons, specific and limited assessment of activities and attitudes toward technology usage, and the new technologies' development (Rosen et al., 2013). For instance, Rosen et al., (2013) developed a comprehensive measurement tool that assesses technology usage, Facebook usage, positive and negative attitudes toward technology and anxiety about being without technology. However, this scale does not consider other new social networks such as Instagram or twitter. Moreover, this scale does not assess the anxiety construct related to technology in enough profundity. In relation to the former, anxiety is only considered as dependence on technology, but it does not take into account the possible anxiety experienced while using technological

devices and precludes other factors that may trigger anxiety (e.g., information overload, pressure to answer messages etc.). Finally, although positive and negative attitudes towards technology are assessed by the scale, these subscales do not provide any information regarding students' well-being when using their devices, apps, and social networks.

The Impact of Technology use on Sleep

Another factor that is important to consider and that plays a bidirectional and interactive effect on mental health is sleep (Vedaa et al. 2016). Several studies have reported associations between sleep problems, anxiety and other mental health problems (Hussain & Griffiths, 2019). Indeed, insomnia is not considered secondary to a mental health diagnosis but as comorbid with it (Scott & Woods, 2019).

Furthermore, rates of insomnia and short sleep duration have been prevalent worldwide and have been considered as major public health problems (Barnes & Drake, 2015). This has been reported especially among student populations where poor sleep symptoms are common (Russell et al., 2019). A study by Becker et al., (2018) examined a sample of 7,600 university students and found that 62% of respondents reported poor sleep.

Sleep problems have been associated with technology usage (Alimoradi et al., 2019; Hussain & Griffiths, 2019). The use of smartphones consists of a leisure activity that can be engaged in at any time. Thus, it can affect users' quality of sleep if it occurs at night-time and create a time shift (Luqman et al., 2020). Indeed, a study conducted by Lastella et al., (2020) found that the use of electronic devices in bed was associated with reduced sleep duration and sleep quality in adults. This finding is consistent with the results of the study conducted by Luqman et al., (2020) that demonstrated an association between SNS usage at night through Smartphone and a poorer quality of sleep. In addition, some studies have suggested that keeping the electronic devices in the bedroom is related to poorer sleep in students (Exelmans

& Van den Bulck, 2016; Whipps et al., 2018). Also, prior to bedtime, the time spent using the devices is important in relation to sleep quality. For instance, a study conducted by Orzech et al., (2015) found that in the 2 hours prior to bedtime, a longer use of digital media was associated with poorer sleep outcomes. The impact on sleep is related to several mechanisms including the displacement of sleep due to technology use, the stimulating effects that increase the physical arousal in the user and the effects of light from the screen that affects physiological markers such as melatonin (Cain and Gradisar, 2010).

One emerging concept that may influence the ability to set boundaries around sleep time and the use of technology is 'the fear of missing out' (FoMO) (Rogers and Barber, 2019; Scott and Woods, 2018).

The Role of Fear of Missing out

Research examining the relationships between technology use, well-being, and mental health outcomes, needs to consider mediating and moderating factors such as the construct of fear of missing out (FoMO). FoMO is operationalized as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" and "a desire to stay continually connected with what others are doing" (Przybylski et al., 2013, p. 1).

Although FoMO as a construct is usually considered in relation to the online context (Alt, 2018; Chai et al., 2019), its definition and the measurement tool do not refer to the online world (Prybylski et al., 2013). Hence, FoMO could be considered as a personality trait or overall tendency that individuals feel fear of missing out on something (Wegmann et al., 2017). However, it has been related to the online context because SNSs allow people to monitor easily what others are doing and therefore to fulfil the basic needs of those high in FoMO (Rogers & Barber, 2019). Moreover, university students identified that their sleep was

restricted because they did not want to go to sleep and miss out social events or any kind of interaction with their peers occurring over social media (Adams et al., 2017). In addition, other students reported that during their sleep the cell phone was present, and they even answered messages (Adams et al., 2017). Accordingly, the researches Barber and Santuzzi (2017) have shown that FoMO is associated with poor sleep hygiene (e.g., behaviours such as taking long naps, consuming caffeine or alcohol before going to bed, etc) in university students. Although these authors did not find a significant association between FoMO and technology use before or during sleep, their findings are not in accordance with findings reported by others. For instance, Scott and Woods (2018) demonstrated that FoMO was significantly associated with higher levels of SNSs at night-time. Therefore, due to the contradictory and limited information regarding the relationship between FoMO and technology usage at night-time, more research is needed. Moreover, the relationship between technology usage and FoMO can be understood within Self-Determination Theory (Deci & Ryan, 1985), as a vehicle to fulfil the basic needs that this theory states (Przybylski et al., 2013). Furthermore, previous research suggests that the satisfaction of basic needs seems to reduce FoMO (Xie et al., 2018). Theory provides a foundational framework to explain the conceptualisation, operationalisation, and functional relationships between the components within it. Although it is not always possible to test the causal relationships between the components, theory nevertheless provides confidence in outcomes when the statistical effects align with the theoretical concepts that are already well established (Jöreskog & Sörbom, 1993).

Hence, the understanding of the theoretical frameworks presented in the literature may help to shed some light to comprehensively examine this area of research.

Theoretical Approaches

There are three major theoretical and conceptual frameworks to understand the use of technology and SNSs. One theoretical perspective in the literature is Self-Determination Theory (Ryan & Deci, 2000). This theory, as we mentioned previously, states that there are three crucial psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2000). Specifically, research assessing the outcomes of SNS usage, has focused on the need for relatedness (Sheldon et al., 2011) for its relevance to SNS context. Sheldon et al., (2011) found that the usage of an SNS platform, specifically Facebook, showed bidirectional outcomes. They found a positive correlation between Facebook usage and disconnection because people who do not meet their relatedness needs offline, use Facebook as a coping strategy. In addition, they found a positive correlation between Facebook and connection in which Facebook usage acts as a rewarding experience by which people attain relatedness.

Another perspective presented in the literature is based on two opposing hypotheses: the stimulation and displacement hypothesis (Valkenburg & Peter, 2007). The stimulation hypothesis specifies that SNS usage increases for those people who have difficulties in creating social relationships and therefore, this usage may be beneficial in increasing well-being, reducing loneliness and becoming more connected. Some studies support this hypothesis (e.g., Valkenburg & Peter, 2007). However, results in the literature are mixed and there are also studies that support the displacement hypothesis. The displacement hypothesis proposes that time spent in SNS displaces time spent in face-to-face interactions (Nie & Erbring, 2002), which will consequently result in the disconnection of the individuals with others offline, and therefore not meeting their deeper relatedness need.

The third theory that has attention in the literature is the Interpersonal-Connection Behaviours Framework (Clark et al., 2018). This framework sustains that SNS usage is prejudicial for the individuals' well-being when this usage is determined by behaviours that do not fulfil needs for acceptance and belonging (e.g., social comparison and isolation) and consequently do not fulfil the need of relatedness. On the contrary, SNS usage is beneficial for well-being when behaviours that satisfy needs of belonging, and connectedness take place. All these theoretical perspectives in general terms seem to be reconciled in the explanation of the bidirectional outcomes obtained through the use of technology and SNSs.

These theoretical perspectives provided a good foundation for the current research in terms of both positive and negative outcomes. Therefore, the constructs used in this study can be traced to theoretical underpinnings, both directly and indirectly, either positively or negatively. For example, positive psychological outcomes (positive perceptions of well-being) could be attributed to the feeling of competence when posting a photo on SNS or writing a post (Jung & Sundar, 2020). Moreover, the construct FoMO has been explained within the context of the Self-Determination Theory, considering that needs that are not fulfilled lead to higher levels of FoMO and consequently to a higher usage of technology, which satisfies psychological needs (Przybylski et al., 2013). In addition, the constructs of anxiety and sleep difficulties may have unintended consequences for well-being and for the satisfaction of the needs of relatedness. Furthermore, the construct of loneliness represents the opposite of relatedness (Chen et al., 2021). In the same vein, social support naturally weaves into these theoretical frameworks as it is seen as adaptive to wellbeing and a buffer for negative outcomes.

Cross-cultural Examination of Technology Usage, Well-being and Mental Health

Research has stablished culture as a factor that affects the relationships between SNSs, technology use and well-being (Lee et al., 2016; Wenninger et al., 2019). More specifically, a review of the literature reveals that the patterns of SNSs use vary in different

countries. For instance, a study conducted by Sheldon et al., (2017) compared Instagram usage among American and Croatian students, respectively, an individualistic and a collectivistic culture. In this cross-cultural study they found that culture moderates the relationship between different forms of gratification and use of Instagram. Furthermore, Lee et al.'s (2016) findings reveal cross-cultural differences in the motivation of usage of SNS and the intensity of this usage among university students from Malaysia, Korea and China. As a result of their findings, they state that research examining the impact of SNS on well-being (positive or negative) needs to consider cross-cultural differences.

Furthermore, cross-cultural studies permit a more valuable understanding of results given the use of several large samples with the same timeline, methodology, and statistical analysis (Laconi et al., 2018). Hence, a foundation of knowledge is needed to promote healthy SNS use. Therefore, it is of sum importance to explore the similarities and differences between several cross-cultural samples.

In this thesis, university students from three countries (UK, Spain, and Turkey) were examined. The cultural differences among the chosen countries are sufficient to provide a rationale for their inclusion in this thesis. These differences are shown on Hofstede's six dimensions of culture: 1) Power Distance Index (high versus low), 2) Individualism Versus Collectivism, 3) Masculinity Versus Femininity, 4) Uncertainty Avoidance Index (high versus low), 5) Long- Versus Short-Term Orientation, and 6) Indulgence Versus Restraint (Hofstede, 2011). Both Spain and Turkey are lower in terms of individualism as compared to UK, which it is high. Additionally, UK is very low in power distance as compared to Spain and Turkey, which are high. In the masculinity domain, the UK is high in masculinity as compared to Spain and Turkey. Moreover, the UK is much lower in uncertainty avoidance than either Spain or Turkey. Finally, in the long-term orientation and the indulgence domains, the UK is higher than Spain and Turkey. Thus, based on all of Hofstede's dimensions we can

conclude that Spain and Turkey are somewhat similar to each other and different from the UK.

Specific hypotheses related to culture are not postulated in the thesis. However, the principal point is that there are sufficient cultural differences among the countries chosen to understand, in a wider context, the thesis's research questions and to ensure the applicability of the measures across countries.

Aims of this Thesis

As the above literature demonstrates, a more nuanced assessment of technology and SNSs usage, such as users' perceptions, and the questions of how and why individuals engage with digital technology is important for making theoretical and empirical progress regarding the relationships between technology use, well-being and mental health (Vannucci et al., 2017). Research needs to advance in this area in order to know how to maximize the benefits of technology and to minimize the negative impact.

Research in this issue has increased dramatically, providing important findings. However, the continuously changing characteristic of technology and social network sites creates novel challenges for researchers to address (Verduyn et al; 2017). Some elements need to be taken into account for studies aimed at extending the current knowledge and avoiding the limitations of the previous research:

1.   There is a need for investigating the factors that predict and mediate the relationships between technology and SNSs usage, well-being and mental health. This study will highlight several of these are indicated in the literature review above (e.g., anxiety, social comparison, and FoMO).

2.	The measure construction is a challenge for researchers in this area. This is a task that should be considered and adapted to the typical users' patterns. Also, research should assess the contextual and psychological mechanisms that are possibly shared by the use of technology and SNS in general instead of identifying specific platforms that can be rapidly discontinued. Thus, research should assess the how and why of general technology usage and social network sites instead of merely replicating previously established findings (Mcfarland & Ployhart, 2015).

Therefore, this thesis' aims are to: (1) examine the relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours and affective states in university students in three countries (Spain, UK and Turkey), and (2) to determine the possible mechanisms (social comparison, fear of missing out) that mediate and predict these relationships. To achieve the above aims, new measures need to be developed and validated across the three different cultures, in order to complement and extend existing validated measures.

Contributions and Application

As technology and SNSs are becoming increasingly a major part of people's life, continued investigation into the consequences of using them, is crucial to help people make informed decisions about the amount of time they spend on their online activities. It is also important that people learn to monitor the time they invest in SNSs so that they can balance usage with other activities. This research recognises the value of adaptive technology use, not least because of the limitations imposed by the pandemic. However, this must be weighed against the problems that can emerge such as obsession, addiction, self-esteem issues, maladaptive social comparison, wellbeing, social dysfunction etc.

This research differs from previous studies in providing clear and comprehensive measures that could cross culture and time. Those measures allow the investigation into relationships between technology usage and the constructs of interest through the assessment of individual perceptions, cognitions, behaviours, and affective states. Moreover, the new measures investigate the possible contextual and psychological mechanisms that mediates these relationships. Through capturing the underlying mechanisms embodied within the psychological constructs used in this study, the researcher will highlight the time invariant aspects of approaches to technology, that are likely to remain as constants whilst SNS platforms continue to evolve. Finally, this research includes a cross-cultural comparison that adds more value to the findings, and it allows the validation of the new measures.

Chapter Summary

To conclude, SNS use has been associated with positive and negative mental health and well-being outcomes (Young et al., 2020). The literature shows inconclusive findings. Previous research has focused on one or few mental health and well-being outcomes (e.g., depression, stress) and has reduced analysis to one platform (e.g., Facebook or Instagram). There is not consensus in the question of whether there is a positive or negative relationship between technology, well-being, and mental health. For instance, Twenge and Campbell (2019) found negative associations between SNS and depression, suicidal ideation, and lower well-being levels. On the other hand, Orben and Prybylski (2019) sustain that the relationships between SNS, mental and well-being are moderated by other variables (gender and analytical methods).

Comprehensively, it seems that it is the quality rather than the frequency of digital devices usage and SNS that predicts anxiety and poorer well-being outcomes (Feinstein et al., 2013). Nevertheless, there is a dearth of research that focuses on specific mechanisms that

may lead to these outcomes. Therefore, the mediating role of mechanisms such as social comparison needs to be researched (Verduyn et al., 2017). In addition, research has already developed a large number of measures for technology use. However, most of these instruments focus on specific facets of technology-related behaviour (e.g., anxiety for dependency to the devices) or specific networks (e.g., Facebook or Instagram). Therefore, these measures do not capture relevant individual differences in the typical users. Also, the emergence of new SNS platforms suggests that any given application may be rendered time variant (e.g., fewer users) and may even become obsolete. Data from this programme could shed light on these associations and questions, improving researchers and practitioners' ability to encourage a more adaptive use of technology.

Theory has provided both structure and context for this project to ensure that the research has been guided by directional signposts. In general, theory gives confidence that the work can be embedded and thus have the stability that stands the test of time. Theory confers a secure base because it is built around a strong body of empirical evidence. In addition, theory serves to generate testable hypotheses that can both support and expand on the theory. Although theory provides strong foundations it also has the flexibility to test emerging constructs or unique combinations of constructs to cater for innovative research and to enhance it further through predictive validity. Moreover, theory is flexible enough to incorporate both nomothetic and ideographic approaches to research as well as cross-sectional and longitudinal perspectives and in the present study, cross-cultural invariance testing. The present study therefore has been designed within the context of the following theories and constructs: Social Comparison Theory, Self-Determination Theory, the Interpersonal Connection Behaviours Framework, the Stimulation and Displacement Hypothesis, with the overall context of individual differences (e.g., sleep, anxiety, FoMO), mental health and wellbeing.

Psychometric is a recurrent and central issue in this thesis and is simply defined as the measurement of the psyche or mind (Michell, 2021). Or the latter could be more broadly understood as cognition, behaviours, and emotions. Psychometric puts the measurement into the psyche so that it gives scientific rigour to the research. However, it also puts the psyche into the metric or measurement so that the research work becomes applied and does not stop with the analysis of numbers. In the integration of these two concepts (metric and psyche), Psychometrics embraces the challenge of measuring human states and traits (i.e., the dynamic sand relatively "fixed" aspects of human individual differences). It links the statistics with psychological content and the applied aspects of human functioning, and it generates confidence by building up validities and reliabilities. In addition, it both guides and tests the development of psychological constructs and has allowed the researcher in this study to test cross-cultural invariance or equivalence of contemporary psychological constructs. Psychometrics has allowed the researcher to test the commonalities and uniqueness across constructs through the processes of Confirmatory Factor Analysis and Structural Equation Modelling. Thus, following the principles of psychometric construction, a pilot study, a panel of experts and content validity (focus group) were carried out and presented in the next chapter.

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Chapter 2- Implications of Technology Usage for Subjective Well-being, Anxiety, and Mental Health: a Measure to Capture University Students' Perceptions

Abstract

The present study provides a measure to investigate the relationships between technology usage and anxiety, and well-being, through the assessment of individual perceptions, behaviours, and affective states in university students. Moreover, this measure of 50 items investigates the possible contextual and psychological mechanisms that may mediate these relationships. Items assessing usage of devices were created based on the most used electronic devices. Items about technology activities were created selecting 11 items from the 27 items' activities included in the Media and Technology Usage and Attitudes Scale (Rosen et al., 2013); social network sites and applications' items were created based on their popularity with the students; perceptions of anxiety and perceptions of well-being scales were created based on the literature and focus group; and for the scale of social comparison, two items were adapted from the Scale for Social Comparison Orientation (Gibbons & Buunk, 1999) and the other five items were new. The processes used in consulting students through focus groups and experts for item clarity and adequacy, as well as reference to content validity and tests through basic statistics have provided confidence that the new items should be carried forward for more thorough analysis and validation. To develop and enhance the content validity of the measure, a pilot study ($N = 27$) and a focus group ($N = 4$) were conducted (Mage $= 27$, sd $= 6.07$, from 8 nationalities, 70% British). Preliminary results from the pilot study revealed acceptable reliabilities for the measure and strong individual differences emerged on each measure, along with sound indicators of normality. Moreover, promising, and interesting correlations were found between some of the constructs of interest. Anxiety due to technology use was positively correlated with total social comparison ($r = .50$, $p < .05$). Nevertheless, the correlation between well-being perceptions and social comparison

was not statistically significant ($r = -.23$, $p > .05$). Moreover, there was not a statistically significant association between well-being perceptions and anxiety due to technology use ($r = -.40$ $p > .05$). Regarding the social network sites' activities, significant associations were found between check your social network site page and well-being perceptions ($r = .44$ $p < .05$); update your status and well-being perceptions ($r = .41$ $p < .05$) and click "like" on someone else's content ($r = .41$ $p < .05$). The new measures emerged with good content validity and preliminary psychometric properties that were sound, and thus may offer a valid and reliable approach for future research.

Introduction

Technology and social media are rapidly developing and changing the way people feel, behave, and interact in the world. In this age of rapid technology development, in which people believe that they could not live without some devices (e.g., smartphones; Smith, 2015), it is crucial to understand how this usage affects important aspects of life.

Students are the most active and enthusiastic users of technology (Wentworth & Middleton, 2014) and the amount of time that they invest in using their devices raises the question of what are the consequences of this usage for them, academically, personally and professionally. Furthermore, since happiness is a basic life goal that is pursued by many people around the world (Tay et al., 2015), marketing hinges upon the assumption that new technologies are designed to increase subjective well-being and happiness. However, the question of whether these are enhanced or undermined remains unclear. Part of the importance of research investigating subjective well-being lies on its influence on health and longevity (Diener et al., 2017; Westerhof et al., 2014). Another important life domain for the youth population is academic performance, a factor that it is also influential in judgments of well-being and overall life satisfaction (Pavot & Diener, 2008; Schimmack, et al., 2009). In

addition, research suggests that measures of negative affect, such as stress and anxiety, are negatively related to well-being, and to life satisfaction among undergraduate students (Asberg et al., 2008). In relation to this, it is important to highlight that anxiety and other mental disorders are problems that university students experience at higher rates than their peers who are not attending university (Cvetkovski et al., 2012; Stallman, 2010). Additionally, a growing body of research has demonstrated the relationship between the use of technology, specifically social technology (e.g., texting, instant messaging, e-mailing) and anxiety (Hoge et al., 2017). For instance, researchers have found that not receiving replies immediately after a message, the amount of text messaging received and the feeling of being dependent on text messaging, were associated with anxiety (Lu et al., 2014, Lu et al., 2011). Therefore, the constantly connected and always-online nature of digital devices can exacerbate feelings of anxiety (Harwood et al., 2014, Hoge et al., 2017). Moreover, there are other facets of technology that could cause anxiety. For instance, technology could contribute to an information overload because individuals are bombarded simultaneously with information from multiple electronic sources (Chen & Lee, 2013). Finally, research has shown that technology use increases negative social comparisons, such as believing that others have better lives and are happier (Chou & Edge, 2012), which may lead to symptoms of anxiety (Vannucci et al., 2017). The question of what the mediators and moderators in the relationship between technology use and anxiety are remains unclear and more research is needed to address this (Hoge et al., 2017).

Many studies have addressed the question of whether time spent interacting with SNS influences subjective well-being (e.g., Vannucci et al., 2017), which refers to how people evaluate their life (Diener, 2009). Some definitions of well-being that can be found in the literature are based on positive factors (positive affect, cognitive evaluation of one's satisfaction with life, meaningful purpose, or good mental health), while others are focused

on the absence of negative mental health, including anxiety, depression, loneliness, and stress (Diener et al., 1985). Previous research has investigated the link between internet use and one or two of the components of well-being. Researchers conducted a meta-analysis of 40 studies, in which 37 used loneliness as an indicator of well-being, 33 used depression, and 7 used life satisfaction (Huang, 2010). Other studies have used mood and loneliness (Kross et al., 2013; Verduyn et al., 2015) or perceived social support (Kraut et al., 1998; Ellison et al., 2007) as short-term measures. Nevertheless, another study assessed how online communication through Facebook influences well-being, broadly constructed (Burke & Kraut, 2016). Results from this study supported the idea that online communications influence well-being when considering all its components. Moreover, as it is reported in the literature review, social support and social comparisons have been frequently studied and are well established as mediators in the relationship between SNS and well-being (Verduyn et al., 2017). However, there is a need for research examining other mechanisms such as perception of wasting time (Sagioglou & Greitemeyer, 2014), information overload (Koroleva et al., 2010) and worrying (Shaw et al., 2015). Thus, researchers need to examine continuously the consequences of technology, SNS and applications usage for well-being (Verduyn et al., 2017). Moreover, the environment of SNS prompts social comparison with others. Some authors have found results that suggests that upward social comparison on Facebook is the cause of the detrimental effects of this social network usage on well-being (Vogel et al., 2014). All these findings provide a helpful view and the coordinates in exploring the ways in which SNS use leads to negative psychological outcomes.

The literature shows that only a limited type of social network platforms and technology has been evaluated by most of the previous studies. For instance, Rosen et al., (2013) evaluated anxiety about being without technology, or dependence, and Facebook usage. However, new platforms such as Instagram, and anxiety perceived when using SNS or

the electronic devices, were not evaluated in their study. In addition, perceived well-being

obtained through the usage of devices, apps, and social networks has not been evaluated to

the best our knowledge. Perceived well-being when using technology could be a factor

associated with actual levels of well-being, and with the general frequency of use.

The Current Study: Developing a Comprehensive Method for Assessment

In this study a measurement tool of digital technology usage was constructed to

investigate the relationships between technology usage and anxiety, and well-being, through

the assessment of individual perceptions, behaviours, and affective states in university

students. Moreover, this new measure investigates the possible contextual and psychological

mechanisms that mediates these relationships. More specifically, the measure consists of the

assessment of:

· Technology usage: devices, activities, social network sites (SNS) and applications.

· Anxiety in relation to the use of devices and SNS.

· Well-being in relation to the use of devices and SNS.

Additionally, the measure will capture whether these relationships are mediated by the next

factor:

· Social comparison using devices and SNS.

Method

Participants

Participants were required to be university students aged 18 or older. Both users and

non-users of several digital technologies, new applications and SNS were invited to

participate. A total of N = 27 participants completed the online survey, however there were

missing data in 3 of the questionnaires. Eighty one percent of the sample was female, ranging in age from 21 to 51 (M = 27; Mdn = 25; SD = 6.07). Moreover, the sample consisted of 8 different nationalities although 70 % of them was British.

The sample included participants studying a level 8 course (PhD or professional doctorate) (67%) and participants studying a level 7 course (PGCERT, PGDIP, Masters) (33%), and 100% were full-time students. Overall mean income averaged £14.300 (SD = 6.395).

Materials

The constructed measure consists of a 50-item measure comprising general technology usage (devices, activities, SNS and applications), perceptions of anxiety, perceptions of well-being and social comparison. The researcher developed the items that form the scales of perceptions of anxiety, perceptions of well-being, and social comparison.

General Technology Usage: Devices

With the aim of assessing how different devices relate to the constructs of the study, a total of 5 digital devices (mobile phone, laptop, desktop computer, tablet, and Ipad) that are considered the most used among the average university student were included in the questionnaire. For these items, the 10-items frequency response scale used by previous research (Rosen et al., 2013) was adopted. This response scale includes the following options ranging from 1 to 10: never, once a month, several times a month, once a week, several times a week, once a day, several times a day, once an hour, several times an hour and all the time. The reason for using this response scale is because it constitutes a fine-grained measure which is perfectly adequate to typical contemporary users (Lin et al., 2016).

General Technology Usage: Activities

Based on the Media and Technology Usage and Attitudes Scale (MTUAS) (Rosen et al., 2013), 11 items related to activities on any device (mobile phone, laptop, desktop, tablet,

Ipad) were selected. In the selection of items, some principles of simplicity and adequacy to modern users were followed. The activities that form each item are: Check your e-mail, Search the internet, Check your social networks page, Browse other persons' profiles, Update your status, Comment on someone else's content, Click "Like" on someone else's content, Play games, Texting, Make calls, Receive calls. These items were rated in the same way as the former ones, with the 10-items frequency response scale ranging from 1 "never" to 10 "all the time" (Rosen et al., 2013).

General Technology Usage: Social Network Sites and Applications

For this block of items, 11 platforms were selected based on their popularity with the students and their effectiveness in previous research (Shensa et al., 2016; Smith, 2015). The items are: Facebook, Instagram, Tumblr, Twitter, Snapchat, WhatsApp, YouTube, Vine, Google+, Educational Apps, Other Apps. The same 10-items' frequency response scale used previously ranging from 1 "never" to 10 "all the time", was used for these items.

Perceptions of Anxiety for Technology use

Perceptions of anxiety for technology usage items were based on the factors found in the literature as the possible mechanisms underlying this relationship. There is limited knowledge regarding the relationship between technology and social media use and anxiety (Vannucci et al., 2017). Thus, the individual questions were related to anxiety for use rather than anxiety for dependence in order to contribute with knowledge in this area of limited research. This domain initially contained 8 items tapping into factors (overload of information, pressure for message senders and receivers, distraction, worrying about wasting time, etc.) that individuals can perceive as the "whys" in their feelings of anxiety while using technology. Specifically, the items tapping into overload of information are: "Seeing lots of different news and information online adds to my anxiety", "Seeing unknown people's

profiles through social networks makes me feel anxious", "Seeing known people's profiles through social networks makes me feel anxious", "Being connected at all time with people make me feel anxious". Moreover, the items tapping into the factor of pressure for message senders and receivers are: "Receiving messages of people through different social networks adds to my anxiety", "Receiving messages of people through my electronic devices adds to my anxiety". Finally, the items that form the factors of distraction and worrying about of wasting time were: "Spending too much time using any electronic device (mobile phone, laptop, desktop, etc.) will make me feel anxious", and "I get anxious during a task if I get distracted by electronic devices". Participants indicated the answers on a 5-point Likert-scale ranging from 1 (strongly agree) to 5 (strongly disagree). The possible range of scores in this scale is between 8 and 40.

Perceptions of Well-being

Perceptions about the impact of technology on well-being items were based on a broadly constructed definition of the construct, drawing strongly on the work of researchers who assessed how online communication influences overall well-being (Burke & Kraut, 2016). The components of the construct used in the current study and therefore, the items created based on these factor are: loneliness ("When I use social networks I feel less isolated"), satisfaction with life ("Spending time using any device will help me to find the meaning and purpose in my life", "Spending time using social networks will help me to find the meaning and purpose in my life", "Using social networks makes me feel less satisfied with my life", "Using any electronic device makes me feel less satisfied with my life"), positive affect ("Social networks make me feel happier", "Social networks are a real source of comfort to me") and negative affect and depression ("Spending time on internet or social networks make me feel depressed"). Furthermore, two of the items are tapping into a self-esteem factor ("Using social networks makes me feel confident and good about myself",

"Using any electronic device makes me feel confident and good about myself"). This block initially was formed by a total of 10 items ranging as the previous items on the 5-point Likert-scale from 1 (strongly agree) to 5 (strongly disagree). The possible range of scores in this scale are between 10 and 50.

Social Comparison

Two items were created from the Scale for Social Comparison Orientation, INCOM, Iowa-Netherlands Comparison Orientation Scale (Gibbons & Buunk, 1999), but with an adaptation to frame social comparison in a social networking context. Specifically, the item "I often compare myself with others with respect to what I have accomplished in life" was adapted to SNS "Social networks induce me to compare myself with others with respect to what I have accomplished in life"; the item "I often compare how I am doing socially (e.g., social skills, popularity) with other people" was adapted to "Social networks induce me to compare how I am doing socially (e.g. social skills, popularity) with other people". The other 3 items were created based on what generally seems to occur in the context of social comparison when using SNS. These three items were "People on social networks seem to have better lives than me", "Social networks sites provide a situation where users constantly compare themselves with others", "Browsing other people's social network profiles creates a pressure to have a perfect body". Also, the 5-point Likert-scale from 1 (strongly agree) to 5 (strongly disagree) was used in this block of items. The possible range of scores in this scale are between 5 and 25.

Procedure

A three-step process was used to develop the scales of this pilot study. First, the researcher conducted a preliminary survey (N = 27) which included the assessment of the constructs and factors identified in the literature that were relevant to technology usage,

anxiety, and well-being. The survey applied to the targeted population allowed exploration of the items, the online data collection, and to give the participants the opportunity for reflection about their use of technology as well as to give consent for being invited to participate in a group discussion. Second, to obtain a deeper insight into the survey, its actual content, and to identify potential variables that could be missing in the actual survey, a focus group (N = 4) was conducted with the participation of the students who gave consent to be contacted after the previous survey completion. Third, a consultation of experts (N = 3) was carried out to evaluate the test specifications and the selection of items with the aim of improving the content validity of the questionnaire.

Focus Group

A focus group was organized and conducted with some of the students ($N = 4$) that took part in the first study and included their email response to participate in the group discussion. This had been approved by the University's Ethics Committee prior to the commencement of the study. Focus groups are considered an important method to evaluate the instruments developed and to enhance content validity and consequently, the validity of research findings (Vogt et al., 2004).

The aims of the focus group were:

1. To provide a good insight into the questionnaires and scrutinize the instrument. To inform about the actual content of the survey questionnaire (its wording, item development, etc)

2. To provide data about students' opinion regarding the factors that take place when using technology.

3. To identify new variables that may impact in the relationship between technology use and the studied constructs.

The focus group was formed by four postgraduate students. The guideline for the interview was based on the questioning route method (Krueger & Casey, 2009), which creates a logical sequence of questions for facilitating engagement of all participants and in-depth analysis. The session lasted 1.5 hours and was audio recorded. Before starting, the conductor briefly explained the purpose of the research and emphasized that there were no right or wrong answers to the questions. Participants were also informed that although the discussion was planned to be audio recorded, participation would be confidential.

In the second half of the session participants were asked to complete a printed version of the questionnaire that they previously filled in online, to ensure that participants' memories were primed. Finally, participants provided their thoughts about the understanding, clarity, and relevance of the items to the target constructs. Comments and recommendations that emerged were recorded. The focus group guide used in the session is presented in the Appendix (see Appendix B).

Consultation of Experts

Moreover, after the focus group a consultation of experts were carried out. Three academic experts reviewed the test specifications and the selection of items to improve the content validity of the questionnaire. The experts were academic lecturers, each of them was native in the three languages used in the questionnaires and familiar with the use of scales and questionnaires. They were from the UK, Spain, and Turkey; and were identified through the academic network. They were contacted through email and the document for completion was provided. Here they were asked to review the survey specifications and the selection of items with their response categories. The document presented the objective of each block of

items and the experts were asked to read it in order to understand the purpose of the questions. In addition, the items were presented with their response category. The experts were asked to rate each item based on relevance, clarity, simplicity, and ambiguity on a five-point Likert scale. They suggested some minor adjustments to the wording, which the researcher adapted. In general, they agreed with the clarity, adequacy, and relevance of the item content.

Results

Scale reliability tests were run for the created scales of perceptions of anxiety and well-being in relation to the use of devices and SNS and social comparison using devices and SNS. Table 1 displays the means, standard deviations, and Cronbach's alpha coefficient of these subscales. All of them had acceptable to excellent reliabilities.

Table 1

Mean, Standard Deviations, and Cronbach's Alpha of Scales of perceptions of anxiety, perceptions of well-being, and social comparison using devices and SNS

Scales	N	Scales' midpoints	Items	Mean	SD	Alpha	Skewness	Kurtosis	Minimun	Maximum
Perceptions of Anxiety	24	24	8	18.46	6.57	.90	.38	-.50	8	33
Perceptions of Well-being	24	30	10	29.46	5.91	.79	-.56	.36	14	39
Social comparison	24	15	5	16.33	4.94	.90	-.13	-.88	8	25

The quality of the data in table 1 is evidenced from the low levels of skewness and kurtosis (>1), suggestive of multivariate normality. Also, all the Alpha values are at or above 0.8 and are thus high indicators of high reliability. The midpoints of the three scales are presented and these show that the mean scores straddle around these in each case. However, the standard deviations show dispersion from each mean and illustrate that individual differences are clearly present in the response patterns.

General Technology Usage

As reported in Tables 2, 3 and 4, the relatively low inter-correlations among the different items for the four factors within the General Technology usage (device's types, activities, SNS and applications), reinforce the decision to treat these items separately.

Table 2

Mean, Standard Deviations, and bivariate correlations between device's types.

Items	Mean	SD	1	2	3	4	5
1. Mobile Phone	8.7	.96	-				
2. Laptop	6.3	1.90	.06	-			
3. Desktop Computer	5.4	2.90	-.02	.09	-		
4. Tablet	1.8	1.69	.01	.24	.32	-	
5. Ipad	2.3	2.01	-.09	-.09	.15	.14	-

$*p \leq 0.05$, $**p \leq 0.01$.

The mean scores in table 2 reflect the frequency of use for each device. Mobile Phone has highest usage, as might be expected, and the standard deviation is clustered around the mean. The lowest usage is Tablet with more dispersion around the mean. Laptop and Desktop Computer come second and third in rank order after Mobile Phone use, but the latter has more dispersion from the mean.

Table 3

Mean, Standard Deviations, and bivariate correlations between SNS and applications.

Items	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Facebook	6.63	2.40	-										
2. Instagram	4.41	2.96	.23	-									
3. Tumblr	1.33	1.27	.12	.24	-								
4. Twitter	3.63	2.80	.02	.39*	-.09	-							
5. Snapchat	3.15	2.52	-.10	.61**	-.09	.46*	-						
6. WhatsApp	6.07	2.32	-.11	-.07	-.28	.32	.29	-					
7. Youtube	5.33	2.20	-.27	-.21	.25	.10	.11	.07	-				
8. Vine	1.33	1.73	.11	.17	.89*	-.19	-.17	-.44*	.15	-			
9. Google+	2.44	2.49	-.29	.08	-.16	-.24	-.01	-.20	-.05	-.12	-		
10. Educational Apps	2.81	2.06	.35	-.29	-.15	-.06	-.31	.19	-.06	-.08	-.22	-	
11. Other Apps	4.52	2.15	.20	-.30	-.15	-.05	-.25	.00	.08	-.14	-.50**	.52**	-

*$p \leq 0.05$, **$p \leq 0.01$.*

In table 3 it can be seen that the frequency of use for the various platforms is highest for Facebook, WhatsApp, YouTube and Other Apps (each above 4). In the range between 2 to 4 are Twitter, Snapchat, Google+ and Educational Apps. At the bottom (<2) are Tumblr and Vine. The variances around the means range from 1.27 to 2.96. The majority of the correlations are non-significant but seven are statistically significant and range from moderate to strong with one at $r = 0.89$. It is unexpected that non-significant correlations have been found between the platforms with the highest frequency of usage (Facebook, WhatsApp, and YouTube).

Table 4

Mean, Standard Deviations, and bivariate correlations between activities.

Items	Median	SD	1	2	3	4	5	6	7	8	9	10	11
1. Check e-mail	7.22	1.09	-										
2.Search the	7.74	1.10	.28	-									
3.Check your SNS	6.93	2.30	.11	.45*	-								
4.Browse other	4.37	2.10	.20	.26	.68**	-							
5.Update status	2.33	1.41	.20	-.07	.24	.17	-						
6.Comment	3.74	2.36	.14	.06	.42*	.17	.52**	-					
7.Click "Like"	5.63	2.30	.05	.16	.65**	.32	.44**	.76**	-				
8.Games	3.30	2.61	-.20	.24	.29	.02	-.06	.19	.32	-			
9.Texting	7.07	1.59	.15	-.14	.09	.19	.09	-.07	.02	-.25	-		
10.Make calls	5.00	1.75	.22	.10	.35	.43*	.19	.14	.10	-.20	.62**	-	
11.Receive calls	5.07	1.61	.41*	.14	.30	.41*	.24	.31	.14	-.21	.61**	.91**	-

*p ≤ 0.05, **p ≤ 0.01.

The mean scores in table 4 reflect the frequency of each activity. Firstly, the activity 'search the internet' has the highest usage, and the standard deviation is clustered around the mean. Secondly, the next activity with the highest usage is 'check the email' which also has a clustered standard deviation around the mean. Thirdly, the next activity with a mean above 7 is 'texting' and it also has a standard deviation that is clustered around the mean. It was expected that these activities showed the highest frequency of usage. Moreover, table 4 shows significant and not significant correlations between the activities. Significant correlations can be seen between SNS activities such as 'check your SNS' with: 'browse other profiles' (strong correlation); 'click like' (strong correlation); 'search the internet' (medium correlation) and 'comment on someone else content' (medium correlation). In addition, 'browse other profiles' showed a significant correlation with 'make calls' and with 'receive calls', however both are medium correlations. 'Update status' is correlated with 'comment' (strong correlation) and with 'like' (medium correlation). Moreover, the latter two are significantly and strongly correlated. Finally, the activities that are not part of SNS such as 'texting', 'make calls' and 'receive calls' show significant and strong correlations between them.

Device's Types

Results of bivariate correlation analysis showed that mobile phone use was positively correlated with well-being perceptions $r(22) = .518, p \leq .010$.

Activities

Table 5 displays the positive and significant correlations found between the activities' items, well-being, and anxiety perceptions.

Table 5

Significant correlations found between some of the activities' items and variables

Items	Anxiety perceptions	Well-being perceptions
Check e-mail	-.066	-.033
Search the internet	.066	.099
Check your SNS	.031	.443*
Browse other profiles	-.082	.286
Comment	-.129	.397
Update status	-.006	.416*
Click 'Like'	.003	.414*
Play games	.094	.133
Texting	.180	-.074
Make calls	-.102	.050
Receive calls	-.107	.084

$*p \leq 0.05$, $**p \leq 0.01$.

The result shown in Table 5 indicates that well-being perceptions only have a

significant relationship with the items: check your social network page $r(22) = .44$; p <.05,

update your status $r(22) = .42$; p <.05, and click 'Like' on someone else's content $r(22) = .41$; p <.05. Nevertheless, anxiety perceptions did not show significant correlations with any of the activities' items (p > .05).

Social Network Sites and Applications

Table 6 displays the positive and significant correlations found between the different social network sites' items, well-being, social comparison, and anxiety perceptions.

Table 6

Correlations found between some of the activities' items and variables

Items	Well-being perceptions	Social comparison	Anxiety perceptions
Facebook	.242	-.004	.209
Instagram	.301	.181	-.136
Tumblr	-.055	.157	.068
Twitter	.275	.077	-.089
Snapchat	.286	.334	-.084
WhatsApp	.086	.286	-.037
YouTube	.029	.025	.029
Vine	.020	.115	.115
Google+	-.403	.077	-.086
Educational Apps	.286	-.102	-.135
Other Apps	.178	-.309	-.143

*Note. Non-significant correlations were found *$p \leq 0.05$, **$p \leq 0.01$.*

The correlations between the frequency of usage for the different social networks'

sites/applications and the scales of well-being, social comparison and anxiety perceptions

were not significant ($p > 0.05$).

Main Variables

Table 7 displays the correlations between total anxiety, social comparison, and well-

being.

Table 7

Correlations between anxiety, well-being, and social comparison.

	1	2	3
1. Anxiety Perceptions	-		
2. Social Comparison	.50*	-	
3. Well-being Perceptions	-.40	-.23	-

$*p \leq 0.05$, $**p \leq 0.01$.

Correlations were computed between the main variables of the study. Perceptions of

anxiety due to technology use was positively correlated with total social comparison $r(22)$

$=.50, p =.012$.

Focus Group

The outcomes from the focus group contributed to the improvement of the scale. The

interview record and transcript were reviewed, and codes were derived inductively by

identifying patterns as they emerged in the data, which led to the development of key themes. Participants provided a variety of factors into the discussion with reference to what potentially makes use of technology and social media to trigger anxiety or decrease the level of well-being.

Some of the factors that were provided and that constituted the coordinates for the development of new items were:

- Expecting instant responses, instant messaging. Contemporary devices such as smartphones, deliver immediate access to other individuals, and this is a factor that makes them extrinsically rewarding (Hussain et al., 2017). Moreover, this factor can be a cause of anxiety if users do not receive the response to their messages immediately. Participants in the focus group reported this factor as pivotal in the relationship between technology usage and anxiety. "What you said about instant access, I do not think is very good for society because it makes you to get used to the responses and if you do not get it then…I see in some cases even in myself than if I do not get the instant responses, I see all the messages, and say why they do not answer to me!, they just do not care about me anymore". "I send a message to my boyfriend, and I can see that he read it but he is not messaging me back, and it is so important, maybe I know that is stupid but still it is messing me up". "This thing of being in constant connection with each other, with this frequency, that creates anxiety". "I do not attribute it to caring about them so where are they, I attributed to technology, that is creating conventions of that everything is instant and constant".

- Sense of an obligation to respond to others' messages. After sending a message, the new online messaging services can provide real-time information to the users about when the recipient has read it. This factor can have a behavioural and emotional effect for the sender as well as for the recipient (Hoyle et al., 2017). The focus group

participants' report ("when someone message you and you do not want to talk, so you are ignoring that person, and thinking go away! that creates anxiety", "but that is because everyone knows what you are doing"). Hoyle et al., (2017), found in their study that the ability to see if a message has been received and read, it causes anxiety to senders, but it also creates pressure for recipients of sending a response.

- Worrying. Worrying and brooding can play an important role in the outcomes of social network platforms (Shaw et al., 2015). Specifically, the participants in the focus groups asserted that they worried about some of their posts and that this resulted in feelings of stress. "If I post something on Facebook, and my friends do not like it, this is an issue for me, I can be so offended".

- Receiving information that is not wanted. Social network users have to process a significant amount of information that can result in overwhelming feelings and fatigue (Lee et al., 2016). "When I go on Instagram specially, there are always pictures of like perfect bodies, so I feel stressed, because of that", "because of the social pressure". Also, when users receive information that is not wanted, for instance information about an ex-partner' life, feelings of stress, anxiety and negative affect can appear. "The inability to not facebook stalk your ex, it is kind of an issue when you see that they are doing things and you are not involved, yeah".

- Wasting time. The feeling that one has wasted their time in an activity can result in anxiety and decreased levels of well-being. The focus group participants reported that sometimes when using social network sites such as Facebook, the feeling of spending time in this meaningless activity leads to negative mood or stress. "It is absolutely bad, you are scrolling through, and you arrive to pictures of cats, cats of Instagram yeah". In concordance with this information, the study conducted by Sagioglou and

Greitemeyer (2014) found that this feeling of wasting time on social networks was a mediator in the negative relationship between social networks usage and emotional well-being.

Consultation of Experts

Following the feedback from the academic experts some pertinent modifications were made in the questionnaire. For instance, the item: "I expect quick responses to my messages and waiting for them makes me feel anxious" was modified because as noticed by the expert, the expectation of quick replies, perhaps does not result in anxiety. The item was initially including two questions within it and was subsequently modified to: "Waiting for answers to my messages makes me feel anxious". Another relevant change was made to some items assessing anxiety. Concretely, some statements of the questionnaire were formulated in this way: ".... adds to my anxiety" and as suggested by the expert this ending means that the individual is anxious already, so it was changed to: ".... initiates my anxiety".

The scale response which was initially a 5-point Likert, was changed to a 7-point Likert scale. This choice was made based on the study population, which consists of students and this population generally rates high on verbal skills, cognitive ability and experience with questionnaires (Weijters et al., 2010). Seven response points gives more latitude than five for selecting an anchor point and reduces problems associated with floor and ceiling effects.

Conclusions

The current study was designed to construct a measure from a clear and comprehensive approach that could cross culture and time. This measure could fill the gap and be used by researchers and professionals interested in capturing relevant individual differences in modern technology users. The preliminary findings obtained in the pilot study revealed some interesting results. Firstly, the results showed acceptable to excellent

reliabilities as well as strong individual differences (dispersion) on the scales that form the

measure. Furthermore, the results suggest that those who experienced more anxiety due to

technology use also had higher levels of social comparison. This finding was predicted based

on previous research in which participants reported a constant social comparison to other

network members, resulting in negative emotions, such as jealousy and anxiety (Fox &

Moreland, 2015). In addition, the current study included items that consider perceived

anxiety due to information overload, and this is in concordance with recent research that has

shown an association between social comparison, information overload, SNS fatigue and the

intention to reduce SNS usage (Niu et al., 2020). Moreover, other interesting results are those

in relation to some of the activities that take place when using SNS, which also seem to have

an emotional gratifying effect. This is suggested by the positive and significant correlations

between these activities and perceptions of well-being increased by SNS and devices usage.

This finding suggests that Facebook could be a "security blanket"; providing a range of

psychological comfort activities for the user such as: check their SNS, browse other persons'

profiles, and comment or click "like" on someone else's content. All these activities at the

same time seems to be reinforcing other individual constructs instead of reinforcing the user's

social support or social interactions, as the latter would be reinforced stronger through other

activities as for instance, texting, making calls, or sending messages.

This study has several practical implications. First, previous studies examined the role

of social comparison in this area of research through scales that are not related to SNS such

as the Iowa-Netherlands Comparison Orientation Measure (INCOM) developed by Schneider

and Schupp (2011) (Brandenberg et al., 2018) or a more specific scale that measure negative

social comparison on only one SNS as Facebook (Lee, 2014; Steers et al., 2014; Niu et al.,

2020). In addition, previous research has developed scales to examine the topic but these are

mostly based on anxiety about being without technology or dependence on technology

(Rosen et al., 2013). In terms of well-being, previous research has suggested that an excessive use of SNS could lead to negative perceptions and/or negative cognitive states, and consequently to a lower well-being. However, perceptions of well-being related to the use of electronic devices and SNS have not been examined yet.

This study depends on our understanding on this theme and developed a measure that examines the psychological constructs and mechanisms that occur while using SNS. This is important because it means that such measures can be used in the present and in the future without the concern of the rapid change and tends in the use of specific SNS platforms.

Some limitations of this study should be acknowledged. First, it is a cross-sectional study and data were collected through self-reported measures. Additionally, this was a pilot study, and therefore results are provisional and should be considered tentatively, given that the sample analysed comprised a fraction of the target sampling aim. Final analyses with a larger sample size are expected to form a more robust image of the relationships between technology use and the constructs of the study. Furthermore, given that researchers have found significant cultural differences in social comparison on Facebook (Song et al., 2019) the next study will examine the relationships between the variables of the study in three different cultures: UK, Spain, and Turkey.

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Chapter 3- Cross-Cultural Study. Psychometrics Properties of the Measures

Abstract

Researchers have been increasingly interested in the area of technology and SNS usage, and its impact on well-being, anxiety, and mental health. However, one of the limitations found in the literature identifies the inconsistency of the measures used. Moreover, the majority of the measures developed are focused on problematic, addictive behaviours, and SNS platforms that are more obsolete due to the increasing usage of new platforms. In this chapter of the thesis the researcher considers the importance of the development of new measures that can be applied to different cultures and reduce the risk of the obsolescence. Therefore, the aim of this study was to develop new measures of social comparison, well-being perceptions, and anxiety perceptions in relation to electronic devices and SNS usage. Furthermore, another objective of this study was to evaluate the psychometric properties of these measures, engendering assurance that they could be used in three different countries (Spain, UK, and Turkey). Exploratory Factor Analysis was conducted to examine the underlying dimensionality of the new scales. In addition, through Confirmatory Factor Analysis the researcher tested the results of the Exploratory Factor Analysis, using AMOS 25, on the same sample of each country for each measure to obtain an estimate of goodness of fit. Finally, multigroup measurement invariance was conducted to the new measures and standardized ones. The findings suggest that the new measures are well-suited to assess well-being perceptions, anxiety perceptions, and social comparison in relation to electronic devices and SNS usage in the three different countries.

Introduction

Facebook and Instagram are used daily by billions of users (Pew Research Center, 2019; Vandendriessche & De Marez, 2020). In fact, the estimations indicate that 79% of 18–29-year-olds have a Facebook account and 67% of 18-year-olds have an Instagram account (Faelens et al., 2021). This proliferation of electronic devices and social networking sites (SNS) in the daily life, is causing an overall concern about the question of how this affects wellbeing and mental health. However, the literature shows that the answer to that question is not easy. In fact, a meta-analysis found that the majority of studies resulted in mixed or even no effects on students' well-being by the usage of online social technologies (Best et al., 2014). On the other hand, another meta-analysis with N = 68.964 students found that the overuse of the internet is related to lower subjective well-being (Lei et al., 2020). Furthermore, the literature shows that the associations that were found between SNS use, well-being and mental health outcomes depend on the indicator of mental health (Huang, 2017). In fact, negative but weak associations were found between SNS use, depression, and loneliness. However, correlations close to zero were found for positive indicators of mental health such as life satisfaction. Therefore, it is of high importance that research focuses on increasing the understanding of how technology and SNS usage impacts well-being and mental health (Faelens et al., 2021). Particularly, it is important to understand which psychological constructs or individual differences are the possible mediators or moderators in the relationships between SNS use and mental health outcomes (Faelens et al., 2021). Some recent studies have suggested psychological constructs as possible mediators. For instance, Verduyn et al., (2017) focused on social comparison. Regardless of that, more research is needed to contribute to the literature in this area providing an understanding of other psychological factors such as perceptions of technology and SNS usage that could be related to well-being and mental health

outcomes. Regarding social comparison, the literature shows that this psychological construct has been examined in terms of the relationship between the construct and the usage of SNS but there are no specific measures of the social comparison that it is triggered by the mere usage of SNS. Despite this, with the aim of examining SNS use, some studies have developed new measures. However, the majority of these measures have been focused on constructs that are of the interest of the researcher (e.g., Rosen et al., 2013) and without consideration of the psychometric properties of the new measures (e.g., Frison & Eggermont, 2016). Frison and Eggermont (2016) examined perceptions of online support by the development of a 4-item measure of perceived online social support. Although it provided a high internal consistency for the developed items (α = .95), the items of the measure were not exposed to a factor analysis, pilot study, focus group or any of the steps that are needed in scale construction. Moreover, another limitation in this area of research is that even when the researchers have carried out more systematic psychometric development, they have focused on a single SNS, mostly Facebook (Yoon et al., 2019; Frost & Rickwood, 2017). Thus, this has been considered as a general limitation in cyberpsychology, attributed to the rapid pace development of technology (Newman et al., 2021). This limitation accentuates the importance of developing new measures in order to explore the relationships between SNS and technology usage with mental health and well-being.

Well-being Perceptions Scale

Research has long recognized the importance of understanding the relationship between technology usage and psychological well-being (Twenge, 2019). However, the current understanding of this relationship remains partial due to mixed findings (Chai et al., 2019). While there are studies suggesting a correlation between the usage of SNS and increased feelings of loneliness, depression, and stress (Lup et al., 2015; Lin et al., 2016),

there are other studies suggesting a positive influence of SNS usage on subjective well-being and satisfaction with life (Valenzuela et al., 2009; Wang, 2013). Some reasons that could explain the mixed findings are: first the focus on the time spent on SNS or the frequency rather than exploring other factors such as perceptions of how SNS affects the users' well-being; and second the lack of research exploring the mediators such as social comparison when using SNS. Some studies have considered perceptions in this theme of research. For instance, Singleton et al., (2016) investigated how young people perceived the relationship between their SNS use and their wellbeing. However, their study was qualitative in nature and therefore, replication is difficult to apply. Therefore, it is of sum importance to create a questionnaire that examines the perceptions of well-being in relation to electronic devices and SNS usage and that can be used in different cultures and times independently of the type of SNS used at that specific moment.

Anxiety Perceptions Scale

University students are at risk of experiencing high levels of stress and anxiety. The literature examining anxiety in relation to technology and SNS usage is composed of studies which mostly examine anxiety through validated scales. Although general levels of anxiety have been examined in this area of research, some specific types of anxiety have been studied, such as anxiety about being without technology or anxiety for dependence on technology (Rosen et al., 2013). Moreover, relational anxiety and its relationship with the usage of smartphone has been studied (Weisskirch, 2012; Weisskirch et al., 2017). However, results are mixed and while some of them found positive associations between smartphone use and anxiety (Elhai et al., 2017), others have found no significant relationships (Lepp et al., 2016). Considering that SNS can be used to express anxiety, incite anxiety (through mechanisms such as information overload, false information, pressure to answer to other users, etc), and overcome anxiety (through social support and information

seeking) (Drouin, 2020), it is important to examine the relationship between the two.

Furthermore, considering this important step in this area of research, it seems necessary to

create a measure of anxiety merely related to technology and SNS usage, which includes the

mechanisms that could play a key role in inciting anxiety (not receiving replies immediately

after a message, the amount of text messages received, feeling of being dependent, and

information overload) (Matthes et al., 2020).

Social Comparison Scale

As previously mentioned, an important psychological process that has been pointed

out as key in the research examining how technology impacts well-being and mental

health, is social comparison. Therefore, many researchers have focused on social

comparison as the cause of the detrimental effect of SNS (Krasnova et al., 2013; Verduyn

et al., 2017; Verduyn et al., 2020).

Social comparison has always occurred in social contexts, and through this

mechanism individuals compare themselves to others and situate their standing

(Festinger, 1954). In SNS in the form of the posts information about users is easily

accessible and prone to social comparison processes (Haferkamp & Krämer, 2011; Lim &

Yang, 2015; Vogel et al., 2014). A widely known characteristic of SNS is that users tend

to present information that is in an overly flattering way (posting successes, happy events

of their life, etc), and this is the principal cause of upward comparison experienced in

SNS users. The latest social comparison refers to the comparison of an individual with a

superior one, while the downward social comparison refers to comparing oneself with an

inferior individual (Gerber et al., 2018). Prior research has found a negative association

between upward social comparison in SNS with mental and subjective well-being (Jang et

al., 2016; Park & Baek, 2018; Schmuck et al., 2019). However, a study conducted by

(Park & Baek, 2018) found that when the comparison is focused on opinion rather than

ability there is not a detrimental effect in users' well-being (Park & Baek, 2018).

However, the limitations in the current literature are firstly, that the majority of the

studies examine social comparison as the general individual's predisposition or/and

taking into account the upward and downward dimensions and they do not consider other

specific aspects of comparison; secondly, most of the studies are focused on one SNS,

such as Facebook (e.g., Vogel et al., 2014), and leave out the social comparison that

happens in other SNS. Therefore, it is important to fill this gap in the literature by the

development of a measure that captures the specific dimensions of social comparison

related to SNS usage such as (feelings that other are happier than you in SNS, comparing

your personal achievements, etc).

The Current Study

The literature shows a variety of measures and methods for evaluating technology and

SNS usage. However, this variety makes difficult to compare across different research

studies as well as results in mixed and contradictory findings. Another limitation in the

literature is that technology advances at a rapid pace and there are no measures of social

comparison, well-being perceptions and anxiety perceptions in relation to technology and

SNS usage that could cross culture and time. Thirdly, measures that were developed by

researchers aims to capture addictive tendencies toward SNS, such as the Bergen

Facebook Addiction Scale (BFAS; Andreassen et al., 2012). Although this mentioned

measurement tool has the most adequate psychometric properties, it cannot be used in

studies that aim to examine a normal usage of SNS. Finally, the literature shows a lack of

cross-cultural research. This is an important gap to address because technology and SNS

use could impact differentially on well-being due to cultural diversity (Lee et al., 2016).

Therefore, the current study firstly aims to develop new measures based on the former

mentioned characteristics. And secondly to apply these new measures to examine the

relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours, and affective states in university students in three countries (Spain, UK and Turkey).

Methods

Participants and Procedure

Participants were required to be university students aged 18 or older. Both users and non-users of several digital technologies, new applications and SNS were invited to participate. Samples were formed by $N = 121$ participants from UK, $N = 111$ participants from Spain, and $N = 221$ participants from Turkey. The web host used for the questionnaires and data collection was Qualtrics.com.

The questionnaires were administered to Schools within Liverpool John Moores University, as well as in the University of Granada (Spain) and the Recep Tayyip Erdogan University (Turkey). The participants in the UK were aged between 18 and 57 years, with a mean (M) of 24.11 and a standard deviation (SD) of 6.62; in Spain between 18 and 56 years, with a mean of 21.03 ($SD = 4.62$); and in Turkey participants were aged between 17 and 31 years, with a mean of 19.11 ($SD = 1.64$). With reference to gender: in UK 74.4% were females ($N = 90$), in Spain 88.3% were females ($N = 98$), while in Turkey 68.3% were females ($N = 151$).

The UK sample included participants studying a level 8 course (PhD or professional doctorate) (22.3%) ($N = 27$) and participants studying a level 7 course (PGCERT, PGDIP, Masters) (16.5%) ($N = 20$), level 6 (3rd year) (11.6%) ($N = 14$), level 5 (2nd year undergraduate) (16.5%) ($N = 20$), level 4 (1st year undergraduate) (24.6%) ($N = 30$) and level

3 (foundation) (8.3%) ($N = 10$). Moreover, 96.7% were full-time students ($N = 117$). The Spanish sample included participants studying a level 7 course (PGCERT, PGDIP, Masters) (0.9%) ($N = 1$), level 6 (3rd year) (14.4%) ($N = 16$), level 5 (2nd year undergraduate) (35.1%) ($N = 39$), and level 4 (1st year undergraduate) (49.5%) ($N = 55$). In addition, 93.7% ($N = 104$) were full-time students. Finally, the Turkish sample was formed by participants studying a level 8 course (PhD or professional doctorate) (0.9%) ($N = 2$), level 6 (3rd year) (14.5%) ($N = 32$), level 5 (2nd year undergraduate) (10.9%) ($N = 24$), level 4 (1st year undergraduate) (73.3%) ($N = 162$), and level 3 (foundation) (0.5%) ($N = 1$). A 99.1% of the total sample were full-time students ($N = 219$).

Adaptation of Measures into Spanish and Turkish

The forward-backward translation method was applied to adapt the measures into Spanish and Turkish (De Pasquale et al., 2017). One lecturer proficient in English and Spanish; and one proficient in English and Turkish, translated the scales into Spanish and Turkish respectively (forward translation). Both versions were compiled and further translated back into English by another translator who had not seen the English version of the measure (back translation). After compiling the back translated versions, all were compared, and a final version was achieved and approved by all translating parties.

Materials

The constructed measure consists of a 54-item measure comprising general technology usage (devices, activities, SNS and applications), perceptions of anxiety, perceptions of well-being and social comparison.

General Technology Usage: Devices

A total of 5 digital devices that are considered the most used among the average university student were included in the questionnaire. For these items, the frequency response scale of

10-point Likert used by previous research (Rosen et al., 2013) was adopted. This response scale includes the following options: never, once a month, several times a month, once a week, several times a week, once a day, several times a day, once an hour, several times an hour, and all the time. The response scale ranges from ranging from 1 "never" to 10 "all the time". Higher scores indicate higher frequency of devices usage.

General Technology Usage: Activities

Based on the Media and Technology Usage and Attitudes Scale (MTUAS) (Rosen et al., 2013), 11 items related to activities on any device were selected. The instruction was 'Please indicate how often you do each of the following activities on any device (mobile phone, laptop, desktop, tablet etc.)'. Some examples of the activities are: "Check your e-mail", "search the internet", and "check your social networks page". These items were rated in the same way as the former ones, with the 10-items frequency response scale (Rosen et al., 2013). The response scale ranges from ranging from 1 "never" to 10 "all the time". Higher scores indicate higher frequency of activities carried out.

General Technology Usage: Social Network Sites and Applications

For this block of items, 11 platforms were selected based on their popularity with the students and their effectiveness in previous research (Smith, 2015; Shensa et al., 2016). The same 10-items' frequency response scale used previously, was used for these items. The instruction was: "Please indicate how often you use each of the following social networks and applications". Some examples of items that are included in this block are Instagram, Twitter, and WhatsApp. The response scale ranges from ranging from 1 "never" to 10 "all the time". Higher scores indicate higher frequency of social network sites and applications usage.

Anxiety Perceptions Related to Electronic Devices and Social Network Sites Usage

This domain contained 12 items tapping into factors (overload of information, pressure for

message senders and receivers, worrying, etc.) that individuals can perceive as the "whys" in their feelings of anxiety while using technology. For instance, to examine anxiety initiated by information overload researchers created the next item: "Seeing lots of different news and information online initiates feelings of anxiety in me". Participants indicated the answers on a 7-point Likert-scale ranging from 1 (Very strongly agree) to 7 (Very strongly disagree). The scores were reversed in the analysis of the data. Therefore, higher scores indicated higher frequency of devices and social network sites usage.

Well-being Perceptions Related to Electronic Devices and Social Network Sites Usage

Perceptions about the impact of technology on well-being items were based on a broadly constructed definition of the construct, drawing strongly on the work of researchers who assessed how online communication influences overall well-being (Burke & Kraut, 2016). The components of the construct used in the current study are perceived social support, satisfaction with life, depression, loneliness, positive and negative affect. An example of these items is: "Spending time using social networks adds to my quality of life'. This block was formed by 10 items with the 7-point Likert-scale ranging from 1 (Very strongly agree) to 7 (Very strongly disagree). The scores were reversed on both factors. Therefore, higher scores indicate higher perceptions of well-being related to electronic devices and social network sites, either positive or negative.

Social Comparison Related to Electronic Devices and Social Network Sites Usage

This block is formed by 5 items. These items are based on what generally seems to occur in the context of social comparison when using SNS (e.g., "People I see on social networks seem to have better lives than me". Also, the 7-point Likert-scale ranging from 1 (Very strongly agree) to 7 (Very strongly disagree) was used in this block of items. The scores were

reversed, and higher scores indicate higher social comparison related to electronic devices and social network sites usage.

Validated Questionnaires

Also, validated questionnaires of well-being and anxiety were administered to examine the relationships between the studied variables. For well-being the validated scales used, included aspects of social and psychological well-being. The different scales used are presented below.

The Satisfaction With Life (Dianer et al., 1985) is formed by 5 items using a 7-point scale that ranges from 7 strongly agree to 1 strongly disagree. Scores were not reversed, as higher scores indicate higher levels of satisfaction with life.

The UCLA Loneliness Scale (Russell, 1996) is formed by 20 items. The response scale is ranging from O ("I often feel this way"), S ("I sometimes feel this way"), R ("I rarely feel this way"), N ("I never feel this way"). The scores are O's =4, all S's =3, all R's =2, and all N's =1. Therefore, higher scores indicate higher levels of loneliness.

The Scale of Positive and Negative Experience (SPANE; Dianer et al., 2009) includes 12 items. The response scale ranges from 1 to 5: Very Rarely or Never = 1, Rarely = 2, Sometimes = 3, Often = 5, Very Often or Always = 6. Higher scores indicate the higher experience of positive or negative feelings.

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988) is a 12-items measure with a response scale from 1 "Very Strongly Disagree" to 7 "Very Strongly Agree". Higher scores indicate higher levels of perceived social support.

For anxiety, the validated measure was The State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983). The Trait form consisting of 20-items measure was used. These items are rating on a 4-point scale from 1 = "Almost Never" to 4 = "Almost Always". Higher

scores indicate greater anxiety. In addition, the 6-items short form of State anxiety was used. These items are also rated on the 4-point scale from 1 = "Almost Never" to 4 = "Almost Always". Higher scores indicate greater anxiety.

Statistical Analyses

Using SPSS V.24, the data were checked for normality by kurtosis and skewness. Agreed upon thresholds for skewness is lower than 1 and lower than 3 for kurtosis. Then, the researcher conducted EFA to examine the underlying dimensionality of each of the new measures developed for each country. Furthermore, the items were subjected to the cut-off point >.50 for corrected item-total correlations (Hair et al., 2010). A principal axis factor analysis was conducted with oblique rotation (direct oblimin). The Kaiser-Meyer-Olkin measure was used to verify the sampling adequacy for the analysis of each country sample, and all KMO values for individual items were subjected to the cut-off point of .5 (Field, 2013).

Initial analyses were run to obtain eigenvalues for each factor in the data using the Kaiser's criterion of >1. Researchers took decisions of deletion of items that loaded onto different factors for each country. Then, the remaining items were tested to another round of factor analysis until a meaningful factor structure was reached.

Moreover, reliability tests were conducted. After the exploratory factor analysis, the researcher tested the results of the EFA through CFA, using AMOS 25, on the same sample of each country for each measure to obtain an estimate of goodness of fit. Furthermore, CFA was conducted for the standardized scales.

After that, Multigroup Measurement Invariance using ML estimation in AMOS 25 was used for the standardized scales and the new measures. The purpose of using multigroup measurement invariance is to answer the question of whether the measurement models are

invariant across the three countries' samples (Byrne, 2010). The model fit was assessed with the consultation of a range of the more reliable fit indices (Hu & Bentler, 1999) namely, relative chi-square statistic ($\chi2/df$), the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Squared Residual (SRMR). Models were considered to adequately fit the data at values of $\chi2/df \leq 2$ to 3, $\leq.08$ for the RMSEA (Browne & Cudeck, 1993), $\geq.90$ for the CFI and TLI, (Bentler & Bonett, 1980) with values above .95 preferred and values $\leq.08$ for SRMR.

A critical proceeding in structural equation modelling (SEM) is setting an appropriate sample size, although there is no consensus in the literature regarding what would be a sufficient sample size (Wang & Wang, 2012). Nevertheless, usually the minimum sample size for conducting SEM has been considered as $N = 100$-150 (Tinsley & Tinsley, 1987; Anderson & Gerbing, 1988; Ding et al., 1995; Tabachnick & Fidell, 2007).

Finally, multigroup measurement invariance was tested at three incremental conditions, consisting of configural invariance, metric invariance, and scalar invariance. The first level, configural invariance, implies that the configuration of the model, which includes the number of factors and the patterns of factor loadings, are the same across groups with no specified equality constraints. The second level, metric invariance testing, requires that the factors loadings be constrained equal across groups. Metric invariance tests whether the items that measure a factor are invariant across groups. Finally, the third level, scalar invariance focuses on the invariance of factor loadings as well as the invariance of item intercepts. The invariance of the three levels, for the restricted model against the less restricted model, is calculated obtaining the difference between the CFI values, or RMSEA values, ΔCFI and ΔRMSEA respectively (Byrne, 2010). A difference of ΔCFI $\geq .010$ and/or a difference of ΔRMSEA $\geq .015$ indicated a significant decrease in model fit and therefore non-invariance (Chen, 2007).

Results

General Technology Usage Activities

Descriptive Statistics and Exploratory Factor Analysis

Data from the 11 items related to activities on any device were explored and screened through descriptive statistics. Data were also tested for reliability and normality through skewness and kurtosis. The corrected item-total correlations were higher than the cut-off of .50, except the following two items in the Spanish and British samples: Update your status (.41 for both samples) and texting (.42 and .37, respectively); in the Turkish sample for the following two items: Comment on someone's else content (.43) and texting (.37). These items were retained regardless of being below the accepted cut-off point of .50 (Hair et al., 2010) because some authors adopt a cut-off point of .30 and .40 (Cristobal et al. 2007; Loiacono et al. 2002).

A principal axis factor analysis was conducted on the 11 items with varimax rotation. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis of each country sample: Turkey: KMO = .78, UK: KMO = .68, and Spain: KMO = .71 (all meritorious according to Hutcheson and Sofroniou, 1999), and all KMO values for individual items were greater than the acceptable limit of .50 (Field, 2013), except for the item that measures the frequency of searching the internet in the Spanish sample (.42). An initial analysis was run to obtain eigenvalues for each factor in the data. Three factors had eigenvalues over Kaiser's criterion of 1 for two of the samples and in combination explained 39.48% of the variance (Turkey), 48.64% (UK). For the other sample four factors had eigenvalues over Kaiser's criterion of 1 and explained 54% of the variance (Spain). The scree plot showed inflexions that

would justify retaining 3 factors. Three factors were retained because of the convergence of the scree plot and Kaiser's criterion on this value. However, the next items: check your e-mail, search the internet, play games, and texting, were eliminated due to loading on more than one factor or loading onto different factors for each country. After deleting those items, another EFA was conducted, and 2 factors were retained. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis of each country sample: Turkey: KMO = .74, UK: KMO = .68, and Spain: KMO = .74. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 43.22% of the variance (Turkey), 58.03% (UK), and 58.68% (Spain).

Reliability tests resulted in alpha values of .83 and .86 for factor 1 and factor 2 respectively in the Spanish sample; values of .78 and .93 for factor 1 and factor 2 respectively in the British sample; and .76 and .61 for factor 1 and factor 2 respectively in the Turkish sample. Although the acceptable value of Cronbach's alpha is 0.7, values above 0.6 are also accepted (Griethuijsen et al., 2015; Taber, 2018).

Confirmatory Factor Analysis

Confirmatory factor analysis was used to test the measurement model with each sample (see Figures 1a, 1b and 1c). This measurement model was formed by two factors. Factor 1 is formed by five frequency items which are related to activities carried out on SNS: 1) Check your social networks page (SNS); 2) Browse other persons' profiles (OtherSNS); 3) Update your status (UpdateStatus); 4) Comment on someone's else content (Comment); 5) Click "Like" on someone else content (Like). Factor 2 is formed by two items which are related to calls: 1) Receive calls; and 2) Make calls. The model fit was assessed with the consultation of a range of the more reliable fit indices (Hu, & Bentler, 1999) namely, relative chi-square statistic (χ^2/df), the Root Mean Square Error of Approximation (RMSEA),

Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean

Squared Residual (SRMR). Models were considered to adequately fit the data at values of

χ2/df ≤ 2 to 3, ≤.08 for the RMSEA (Browne, & Cudeck, 1993), ≥.90 for the CFI and TLI,

(Bentler, & Bonett, 1980) with values above .95 preferred and values ≤.08 for SRMR.

Figure 1a. Measurement model for the scale General Technology Usage: Activities in the
Spanish sample.

Figure 1b. Measurement model for the scale General Technology Usage: Activities in the
British sample.
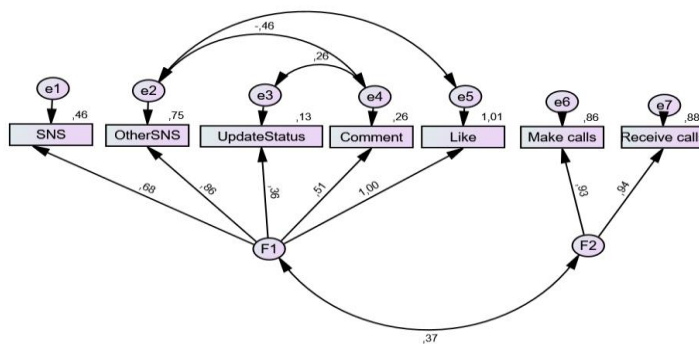
Figure 1c. Measurement model for the scale General Technology Usage: Activities in the Turkish sample.
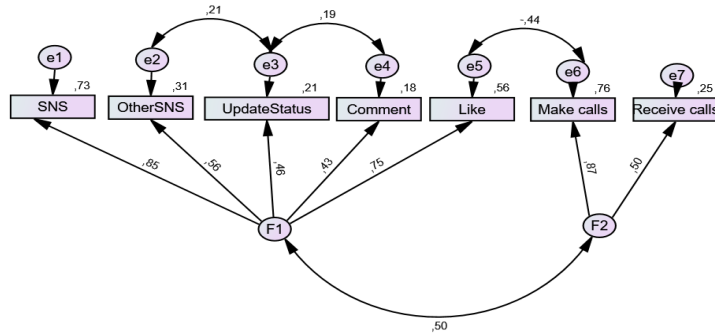
Figures 1a, 1b and 1c show the standardized factor loadings and factor covariance of each scale by country. See table 1 for descriptive statistics of the items that form each factor and their factor loadings. For the Spanish sample, the results were as follows: $\chi^2 = 22.24$, degrees of freedom = 12, $p = .035$; CFI = .88, TLI = .78 and RMSEA = .088 (90% confidence interval [CI], .02–.14). The values for the UK sample were: $\chi^2 = 8.95$, degrees of freedom = 10, $p = .54$; CFI = 1.00, TLI = 1.023 and RMSEA = .00 (90% CI, .00–.91). The values for the Turkey sample were: $\chi^2 = 8.89$, degrees of freedom = 10, $p = .54$; CFI = 1.00, TLI = 1.02 and RMSEA = .00 (90% CI, .00–.07).

For the British and the Turkish samples, the RMSEA and CFI values indicated good fit. The CFI value for the Spanish sample indicated a poor fit.

Table 1

Descriptive Statistics and Factor loadings of items

Items	Spanish (N = 111)				English (N = 121)				Turkish (N = 221)			
	M	SD	Factor loading	Cronbach's Alpha	M	SD	Factor loading	Cronbach's Alpha	M	SD	Factor loading	Cronbach's Alpha
Factor 1 SNS Activities				.83				.78				.76
SNS	6.43	2.57	.80		7.60	1.71	.68		7.62	2.55	.85	
OtherSNS	5.80	2.24	.83		4.75	2.21	.86		5.48	2.67	.56	
UpdateStatus	2.59	1.82	.38		2.50	1.53	.36		3.82	2.34	.46	
Comment	3.44	1.86	.71		3.78	2.04	.51		2.82	1.80	.43	
Like	6.25	2.50	.81		6.36	2.31	1.00		7.45	2.94	.75	
Factor 2 Calls Activities				.86				.93				.61
Make Calls	5.04	1.70	1.40		5.17	1.82	.93		6.94	2.47	.87	
Receive Call	5.05	1.60	.50		5.17	1.67	.94		8.13	2.03	.50	

Measurement Invariance

Configural Invariance. The two-factor configural invariance (M1) model's fit is good based on the RMSEA and poor based on the CFI (RMSEA = 0.05 [90% CI, 0.04–0.07], CFI = 0.85). In this model, the indexes RMSEA and CFI are inconsistent, and while the RMSEA is good, the CFI fails to meet the cut-off.

All factor loadings were significant ($p < 0.05$), except for the item "receive calls" in the Spanish sample. Moreover, factor loadings ranged from 0.38 to 1.4. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit based on the RMSEA, but a poor fit based on the CFI (RMSEA = 0.053 [90% CI, 0.04–0.07], CFI = 0.80). Moreover, ΔRMSEA was within recommended guidelines, supporting metric

invariance but ΔCFI was over the cut-off value. Nevertheless, the researcher proceeded to test for scalar invariance.

Scalar Invariance. As the two previous models, the scalar invariance model (M3) fit the data well based on the RMSEA value but failed to fit the data based on the CFI value (RMSEA = 0.05 [90% CI, 0.04–0.06], CFI = 0.79). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 2

Results of tests for invariance across countries

	Model fit				Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	78.76**	36	.05 (.04-.07)	0.85	–	–	–	–	–
M2	104.68**	46	.05 (.04–.07)	0.80	M2vs.M1	25.92	10	.00	.05
M3	114.37**	52	.05 (.04–.06)	0.79	M3vs.M2	9.69	6	.00	-.01

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Well-being Perceptions

Descriptive Statistics and Exploratory Factor Analysis

The data were checked for normality by kurtosis and skewness. Agreed upon thresholds for skewness is lower than 1 and lower than 3 for kurtosis. Furthermore, the items satisfied the cut-off point for corrected item-total correlations of being higher than .50 (Hair et al., 2010). A principal axis factor analysis was conducted on the 10 items with oblique rotation (direct oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis of each country sample: Turkey: KMO = .742, UK: KMO = .764, and Spain: KMO = .757 (all meritorious according to Hutcheson & Sofroniou, 1999), and all KMO values for individual items were greater than the cut-off point of .5 (Field, 2013). An initial analysis was run to obtain eigenvalues for each factor in the data. Three factors had eigenvalues over Kaiser's criterion of 1 with a total variance explained of 64.607% for the Spanish sample and 59.085 for the UK sample. Two factors were extracted in the Turkish sample, which in combination explained a total of 47.508% of variance. However, items 1 and 10 were removed because they loaded onto different factors for each country. Then, the remaining items were tested to another round of factor analysis and a meaningful factor structure was reached. The scree test indicated that a two-factor solution was appropriate, and 8 items remained. The KMO were .707 for the Turkey' sample, for the UK' sample .740 and .734 for the Spain' sample. The total variance percentage explained was 53.287 (Turkey), 52.559 (UK) and 65.430 (Spain). The results showed that the scale Well-being perceptions was not unidimensional but comprises two dimensions. Factor 1 is related to Well-being perceptions Positive, which as indicated by the name, refers to positive perceptions of well-being (e.g., "After using social networks I feel happier"). Also, Factor 2 on Well-being perceptions Negative which as indicated by the name, refers to negative perceptions of well-being (e.g., "Spending time on internet or social network depresses my mood").

Reliability tests resulted in alpha values above .70 for both factors in the three countries, which is the agreed acceptable value (Nunnally, 1978).

Confirmatory Factor Analysis

Confirmatory factor analysis was used to test measurement model with each sample for the well-being perceptions scale (see Figures 2a, 2b and 2c).

Figure 2a- Measurement model for Well-being Perceptions Scale in the Spanish sample.
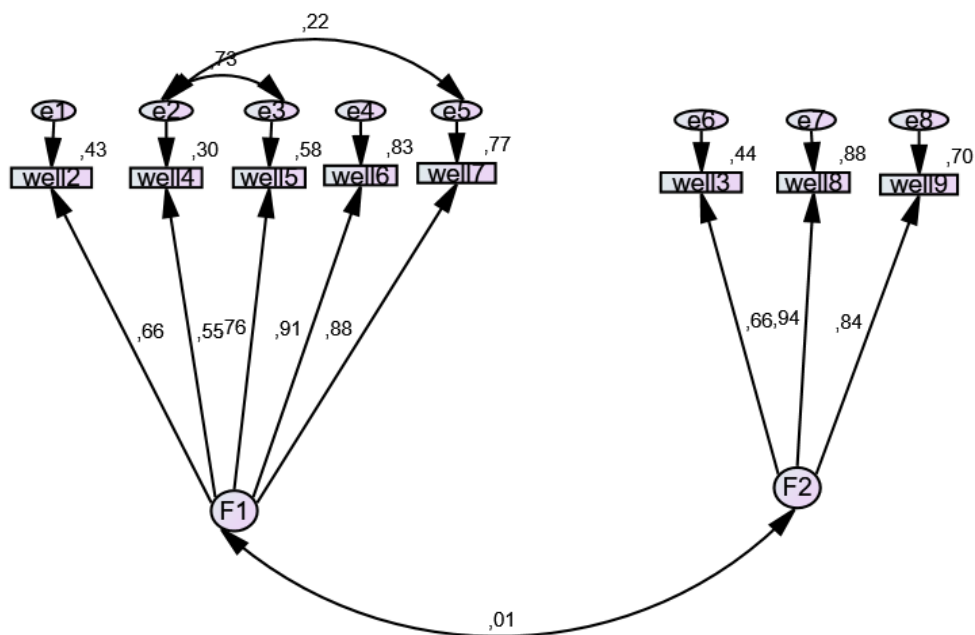
Figure 2b- Measurement model for Well-being Perceptions Scale in the British sample.
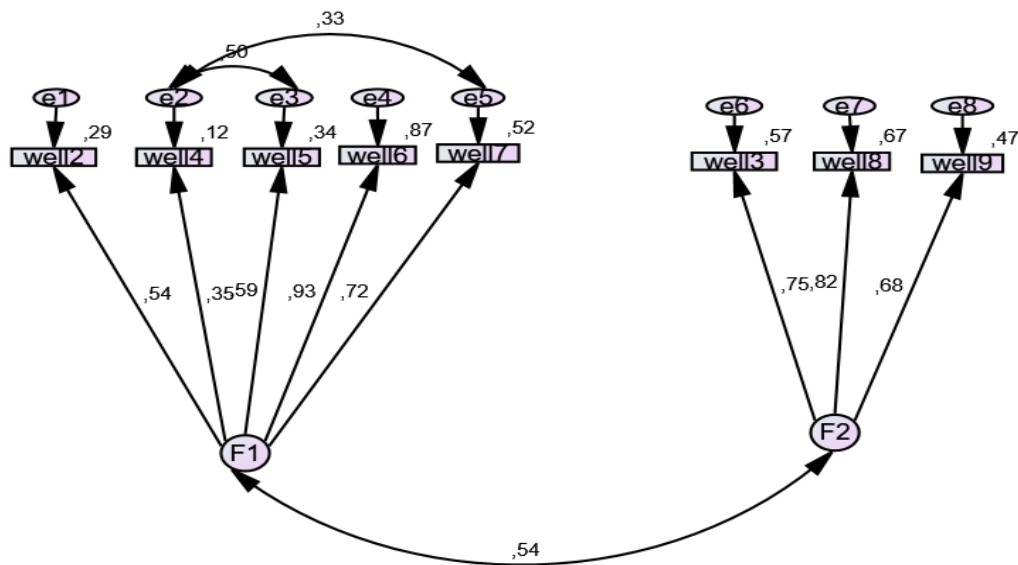
Figure 2c- Measurement model for Well-being Perceptions Scale in the Spanish sample.
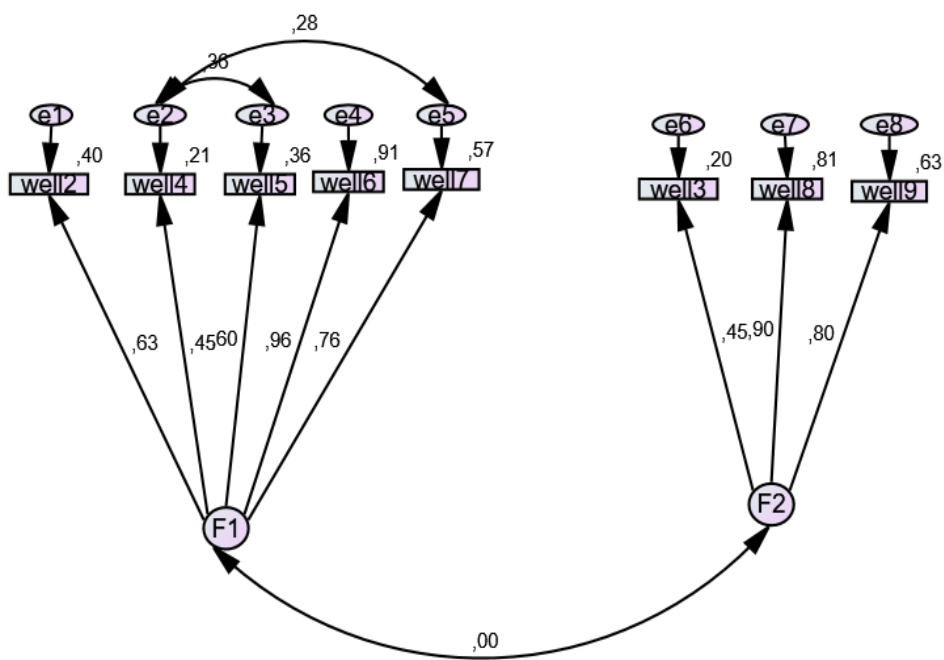
The results of the confirmatory factor analysis of the assumed two-factor model in each country suggest that the model is appropriate across countries. The standardized factor loadings and factor covariance of each scale by country see Figure 2. For the Spanish sample, the results were as follows: $\chi^2 = 27.28$, degrees of freedom = 17, $p = .05$; CFI = .98, and RMSEA = .07 (90% confidence interval [CI], .00–.12). The values for the UK sample were: $\chi^2 = 32.15$, degrees of freedom = 17, $p = .01$; CFI = .96, and RMSEA = .09 (90% CI, .04–.13). The values for the Turkey sample were: $\chi^2 = 36.71$, degrees of freedom = 17, $p = .004$; CFI = .97, and RMSEA = .07 (90% CI, .04–.10).

For all groups, the RMSEA values indicated good fit and the CFI values indicated acceptable fit.

Table 3

Descriptive Statistics and Factor loadings of items

Items	Spanish (N = 111)			English (N = 121)			Turkish (N = 221)		
	M	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*
Factor 1 Well-being perceptions Positive									
Well2	3.50	1.16	.66	3.98	1.14	.54	4.07	1.35	.63
Well4	2.93	1.28	.55	4.17	1.14	.35	4.02	1.48	.45
Well5	2.70	1.25	.76	3.79	1.24	.59	3.24	1.43	.60
Well6	3.03	1.30	.91	3.64	1.23	.93	4.02	1.49	.96
Well7	3.01	1.21	.88	3.87	1.17	.72	4.26	1.38	.76
Factor 2 Well-being perceptions Negative									
Well3	5.10	1.27	.66	4.38	1.29	.75	4.36	1.28	.45
Well8	4.68	1.37	.94	4.03	1.25	.82	4.36	1.38	.90
Well9	5.03	1.11	.84	4.48	1.13	.68	4.63	1.27	80

Measurement Invariance

The results for measurement invariance are displayed in Table 4.

Configural Invariance. The two-factor configural invariance model (M1) fit the data very well (RMSEA = .04 [90% CI, .03–.06], CFI = .97). Moreover, all factor loadings were significant ($p < .05$) and ranged from .55 to .94. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = .04 [90% CI, .03–.06], CFI = .96). Moreover, ΔCFI and ΔRMSEA were within recommended guidelines, supporting metric invariance. Therefore, it was proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) does not fit the data very well (RMSEA = .05 [90% CI, .00–.04], CFI = .95). The ΔRMSEA value supported the scalar invariance model (ΔRMSEA = .01) and the ΔCFI had a value of -.01. Therefore, scalar invariance was supported.

Table 4

Results of tests for invariance across countries of the Well-being perceptions scale

	Model fit				Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	96.18[*]	51	.04 (.03-.06)	.97	–	–	–	–	–
M2	120.95[*]	63	.04 (.03–.06)	.96	M2 vs. M1	24.76	12	.00	-.01
M3	149.70	69	.05 (.04–.06)	.95	M3 vs. M2	28.75	6	.01	-.01

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index.
M1, configural invariance; M2, metric invariance; M3, scalar invariance. [*]$p < 0.05$.

Anxiety Perceptions

Descriptive Statistics and Exploratory Factor Analysis

The skewness and kurtosis values were respectively lower than 1 and lower than 3. Corrected item-total correlations were higher than .50 (Hair et al., 2010). A principal axis factor analysis was conducted on the 12 items with oblique rotation (direct oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis of each country sample: Turkey: KMO = .82, UK: KMO = .81, and Spain: KMO = .79 (all meritorious according to Hutcheson and Sofroniou, 1999), and all KMO values for individual items were greater than .70, which is well above the acceptable limit of .5 (Field, 2013). An initial

analysis was run to obtain eigenvalues for each factor in the data. Three factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 42.41% of the variance (Turkey), 47.47% (UK) and 47.17% (Spain). The scree plot showed inflexions that would justify retaining 3 factors. Three factors were retained because of the convergence of the scree plot and Kaiser's criterion on this value. However, items 4, 5, 6, 9, and 12 were eliminated due to loading on more than one factor or loading onto different factors for each country. Then, the remaining items were tested to another round of factor analysis until a meaningful factor structure was reached. The screen test indicated that a two-factor solution was appropriate. At the end of the factor analysis procedure, 7 items remained. The KMO were .73 for the Turkey' sample, for the UK' sample .69 and .74 for the Spain' sample. The total variance percentage explained was 40.29 (Turkey), 38.48 (UK) and 40.77 (Spain). The results showed that the scale Anxiety perceptions was not unidimensional but comprises two dimensions. Factor 1 Anxiety Perceptions Cognitive refers to aspects of cognitive anxiety for instance for a cognitive overload (e.g., Seeing lots of different news and information online initiates feelings of anxiety in me). Factor 2 Anxiety Perceptions Social refers to social factors such as the pressure to answer a message (e.g., Receiving messages of people through different social networks initiates feelings of anxiety in me).

Reliability tests resulted in alpha values above .60 and .70 for both factors in the three countries. Although acceptable values are normally above .70 (Nunnally, 1978), values above .60 are also acceptable (Hair et al., 2006).

Confirmatory Factor Analysis

Figure 3 shows the standardized factor loadings and factor covariance of each scale.

Figure 3a- Measurement model for Anxiety Perceptions Scale in the Spanish sample.
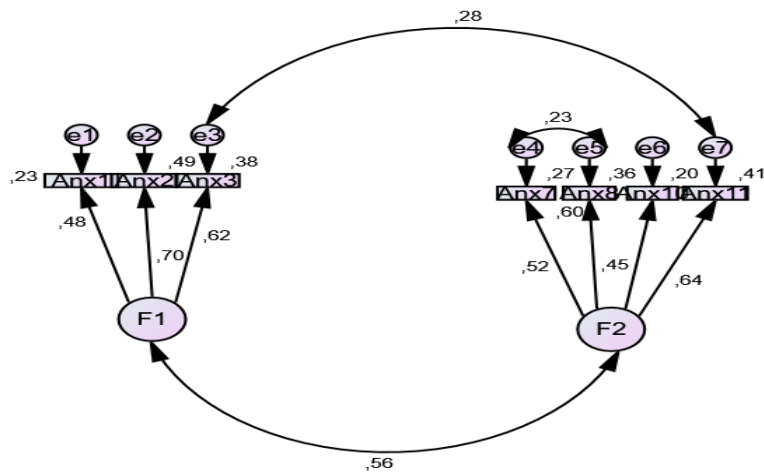
Figure 3b- Measurement model for Anxiety Perceptions Scale in the British sample.

Figure 3c- Measurement model for Anxiety Perceptions Scale in the Turkish sample.
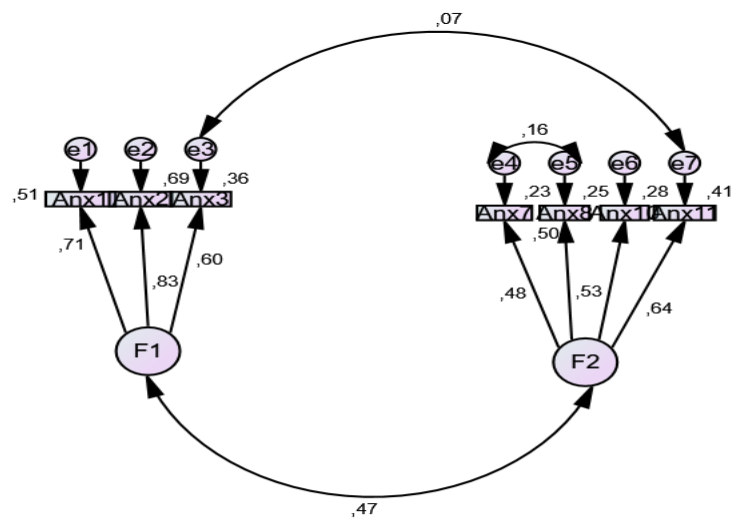
The results of the confirmatory factor analysis of the assumed two-factor model in each country suggest that the model is appropriate across countries. The standardized factor

loadings and factor covariance of each scale by country see Figure 3. Descriptive statistics and factor loadings are shown in table 5. For the Spanish sample, the results were as follows: χ^2 = 17.61, degrees of freedom = 11, p = .09; CFI = .97, and RMSEA = .06 (90% confidence interval [CI], .00–.13). The values for the UK sample were: χ^2 = 15.31, degrees of freedom = 11, p = .17; CFI = .97, and RMSEA = .06 (90% CI, .00–.12). The values for the Turkey sample were: χ^2 = 17.05, degrees of freedom = 11, p = .11; CFI = .98, and RMSEA = .05 (90% CI, .00–.09).

For all groups, the RMSEA values indicated good fit and the CFI values indicated acceptable fit.

Table 5

Descriptive Statistics and Factor loadings of items

Items	Spanish (N = 111)			English (N = 121)			Turkish (N = 221)		
	M	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*
Factor 1 Anxiety Perceptions Cognitive									
Anx1	4.02	1.68	.48	4.06	1.75	.72	4.52	1.76	.71
Anx2	4.09	1.58	.70	4.07	1.58	.57	5.04	1.56	.83
Anx3	2.95	1.43	.62	3.72	1.62	.60	3.67	1.64	.60
Factor 2 Anxiety Perceptions Social									
Anx7	3.96	1.72	.52	3.85	1.64	.38	4.37	1.60	.48
Anx8	3.54	1.64	.60	4.27	1.71	,44	3.59	1.59	.50
Anx10	4.06	1.82	.45	4.71	1.65	.49	3.32	1.54	.53
Anx11	3.68	1.51	.64	4.26	1.61	.76	4.01	1.70	.64

Measurement Invariance

The results for measurement invariance are displayed in Table 6.

Configural Invariance. The two-factor configural invariance model (M1) fit the data very well (RMSEA = .03 [90% CI, .01–.05], CFI = .97). Moreover, all factor loadings were significant (p < .05) and ranged from .64 to 1.38. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = .03 [90% CI, .00–.04], CFI = .97). Moreover, ΔCFI and ΔRMSEA were within recommended guidelines, supporting metric invariance. Therefore, it was proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) fits the data soundly well (RMSEA = .02 [90% CI, .00–.04], CFI = .97). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 6

Results of tests for invariance of the Anxiety perceptions scale across countries

| | Model fit | | | | Model difference (*ΔM*) | | | | |
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	50.00*	33	.03 (.01-.05)	0.97	–	–	–	–	–
M2	58.55	43	.03 (.00–.04)	0.97	M2 vs. M1	8.55	10	.00	.00
M3	62.908	49	.02 (.00–.04)	0.97	M3 vs. M2	4.35	6	-.01	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. $^*p < 0.05.$

Social Comparison Scale

Descriptive Statistics and Exploratory Factor Analysis

Normality was assessed through skewness and kurtosis and previously mentioned cut-off values were obtained. Moreover, the items satisfied the cut-off point for corrected item-total correlations of being higher than .50 (Hair et al., 2010), except of item 3 which had a value below .50 for each country. A principal axis factor analysis was conducted on the 5 items with oblique rotation (direct oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis of each country sample: Turkey: KMO = .785, UK: KMO = .764, and Spain: KMO = .819 (all meritorious according to Hutcheson and Sofroniou, 1999), and all KMO values for individual items were above the cut-off point of .5 (Field, 2013), except for item 3 in the UK sample which had a value of .373. It was decided to delete this item as it showed low corrected item-total correlations in each country, a low KMO value and factor loading (.11) in the UK sample, and its deletion increased Cronbach's Alpha coefficient in the Spanish and the UK samples.

Only one factor was extracted in the analysis with the 4 items. The factor had eigenvalues over Kaiser's criterion of 1 and explained 52.376% of the variance (Turkey), 60.329% (UK) and 62.550% (Spain).

Reliability tests resulted in alpha values of .864 for the Spanish sample, .857 for the UK sample and .797 for the Turkish sample, all above the acceptable value of .70 (Nunnally, 1978).

Confirmatory Factor Analysis

Figure 4 shows the standardized factor loadings and factor covariance of the social comparison scale in each country.

Figure 4a- Measurement model for Social Comparison Scale in the Spanish sample.
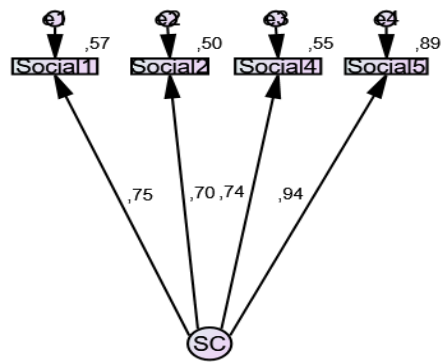
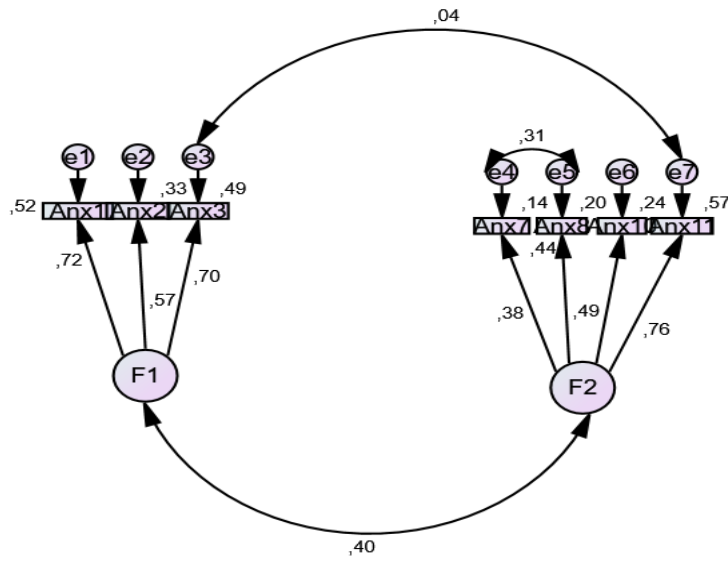Figure 4b- Measurement model for Social Comparison Scale in the British sample.
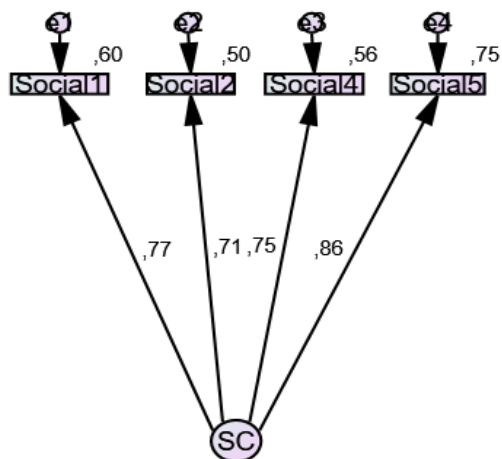
Figure 4c- Measurement model for Social Comparison Scale in the Turkish sample.
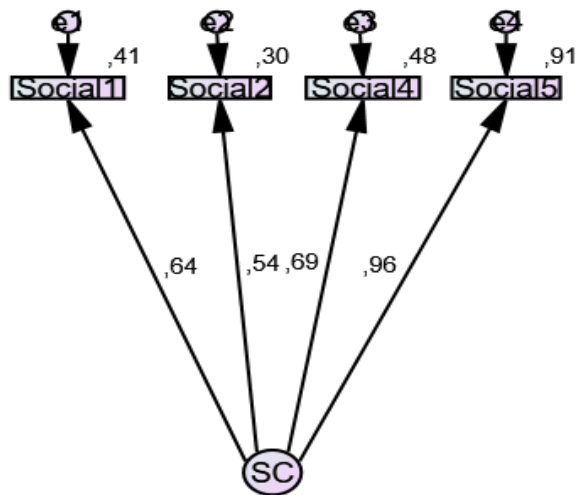
The results of the confirmatory factor analysis of the one-factor model in each country suggest that the model is appropriate across countries. The standardized factor loadings and factor covariance of each scale by country see Figure 4. For the Spanish sample, the results were as follows: $\chi^2 = 1.22$, degrees of freedom = 2, $p = .543$; CFI = 1.00, and RMSEA = 0.00 (90% confidence interval [CI], 0.000–0.164). The values for the UK sample were: $\chi^2 = 5.437$, degrees of freedom = 2, $p = .066$; CFI = 0.984, and RMSEA = 0.120 (90% CI, 0.000–0.246). The values for the Turkey sample were: $\chi^2 = 1.627$, degrees of freedom = 2, $p = .443$; CFI = 1.00, and RMSEA = 0.00 (90% CI, 0.000–0.126).

The RMSEA values indicated good fit for the Spanish and Turkish samples. However, the RMSEA value for the UK sample did not indicate good fit. Nevertheless, Kenny et al.,

(2014) found that models with small degrees of freedom had RMSEA values that frequently indicated a poor model fit falsely. For all the groups, the CFI values indicated acceptable fit.

Table 7

Descriptive Statistics and Factor loadings of items

Items	Spanish ($N = 111$)			English ($N = 121$)			Turkish ($N = 221$)		
	M	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*	*M*	*SD*	*Factor loading*
Social1	3.49	1.75	.75	4.58	1.54	.77	3.62	1.74	.64
Social2	4.33	1.49	.70	4.7	1.56	.71	4.08	1.71	.54
Social4	3.25	1.74	.74	3.78	1.69	.75	3.53	1.71	.69
Social5	3.79	1.78	.94	4.25	1.83	.86	3.71	1.69	.96

Measurement Invariance

The results for measurement invariance are displayed in Table 8.

Configural Invariance. The configural invariance model (M1) fit the data very well (RMSEA = 0.029 [90% CI, 0.000–0.072], CFI = 0.997). Moreover, all factor loadings were significant ($p < 0.05$) and ranged from 0.70 to 0.94. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = 0.000 [90% CI, 0.000–0.042], CFI = 1.000). Moreover, ΔCFI and ΔRMSEA (0.003 and 0.029 respectively) were within recommended guidelines, supporting metric invariance. Therefore, it was proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) fit the data soundly well (RMSEA = 0.000 [90% CI, 0.000–0.035], CFI = 1.000). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 8

Results of tests for invariance of the social comparison scale across countries.

			Model fit			Model difference (ΔM)				
Model	χ2	df	RMSEA (90% CI)	CFI	ΔM	Δχ2	Δdf	ΔRMSEA	ΔCFI
M1	8.29	6	.03 (.00-.07)	0.99	–	–	–	–	–
M2	10.22	12	.00 (0.00–0.042)	1.00	M2 vs. M1	1.93	6	.03	.00
M3	10.80	14	.00 (0.000–0.035)	1.00	M3 vs. M2	.57	2	.00	.00

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Validated Measures

All the validated measures used in the study were subjected to a confirmatory factor analysis (CFA) using AMOS 25 to test the factor structure found in previous studies for each of the validated scales. Then, multigroup measurement invariance was conducted as it was done previously with the developed measures. Results are presented below.

Perceived Social Support

Descriptive Analysis and Internal Consistencies. Table 9 shows the means, standard deviations and internal consistencies for the Spanish, English, and Turkish versions. Internal consistencies for the subscales of Significant others (SOS), Family (FAM) and Friends (FRI) are good (Clara et al., 2003).

Table 9

Descriptive Statistics and Internal Consistency for Perceived Social Support subscales

	Spanish ($N = 111$)			English ($N = 121$)			Turkish ($N = 221$)		
	M	*SD*	*α*	*M*	*SD*	*α*	*M*	*SD*	*α*
SOS	24.01	3.28	.822	21.44	6.56	.950	15.21	8.48	.938
FAM	22.95	5.15	.918	20.02	6.13	.905	21.50	6.43	.900
FRI	23.66	3.57	.891	20.09	5.84	.946	19.66	6.39	.909

Note. Significant others (SOS), Family (FAM), Friends (FRI).

Factorial Validity. In accord with previous findings about the dimensionality of the MSPSS, a confirmatory factor analysis (CFA) using AMOS 25 was computed to test the three-factor structure found in previous studies (Clara et al., 2003). Firstly, the three-factor structure for the MSPSS was fitted separately in the three samples. The three models with standardized factor loadings are presented in Figure 1. The MSPSS factorial structure adequately fitted the data for the three samples considered separately: Spanish (RMSEA = .054 [90% CI, 0.000–0.087], CFI = 0.983), for the English (RMSEA = .075 [90% CI, 0.046–0.103], CFI = 0.975) and for the Turkish (RMSEA = .072 [90% CI, 0.053–0.091], CFI = 0.973). For these models, all parameter estimates were statistically significant.

Figure 5 shows the factor structure of the MSPSS in each of the three countries.

Figure 5a- Measurement model for the MSPPSS in the Spanish sample.
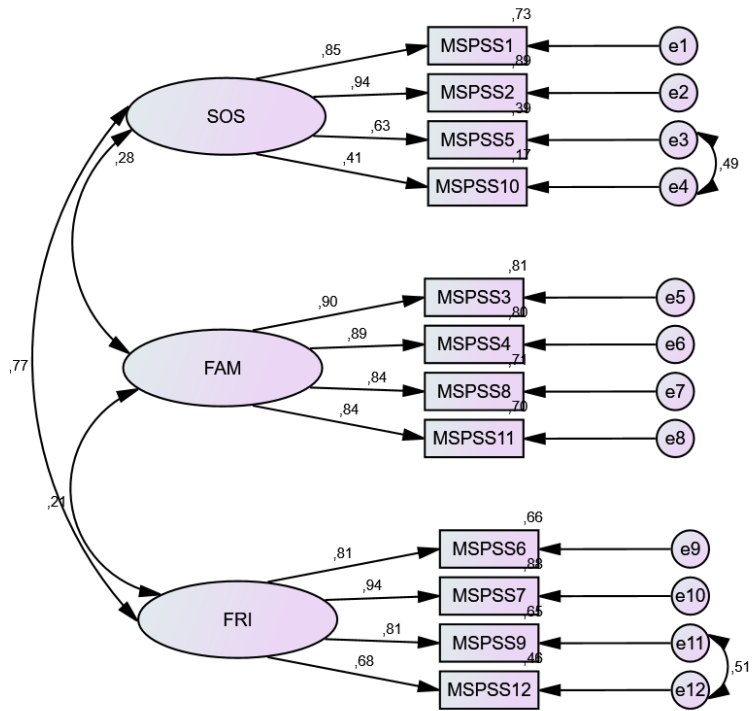
Figure 5b- Measurement model for the MSPPSS in the British sample
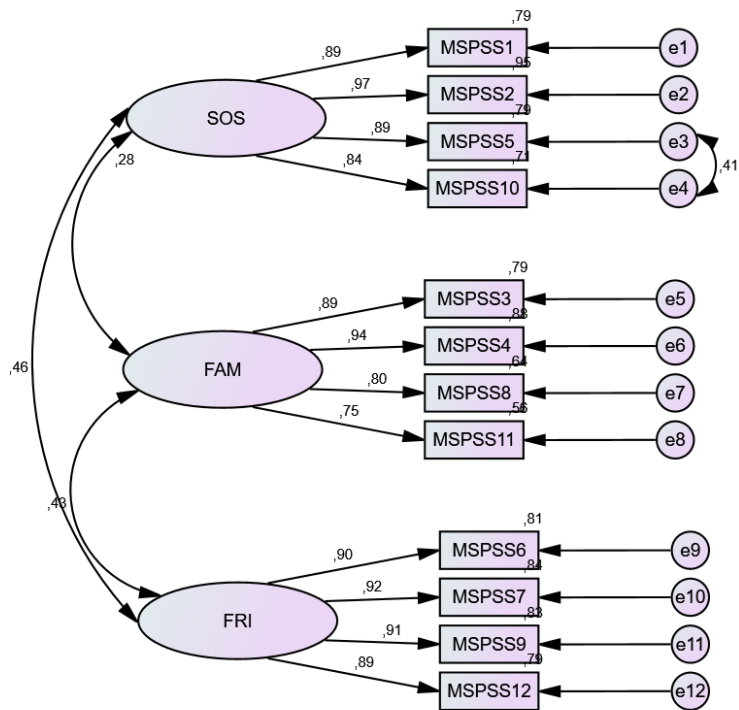
Figure 5c- Measurement model for the MSPPSS in the Turkish sample
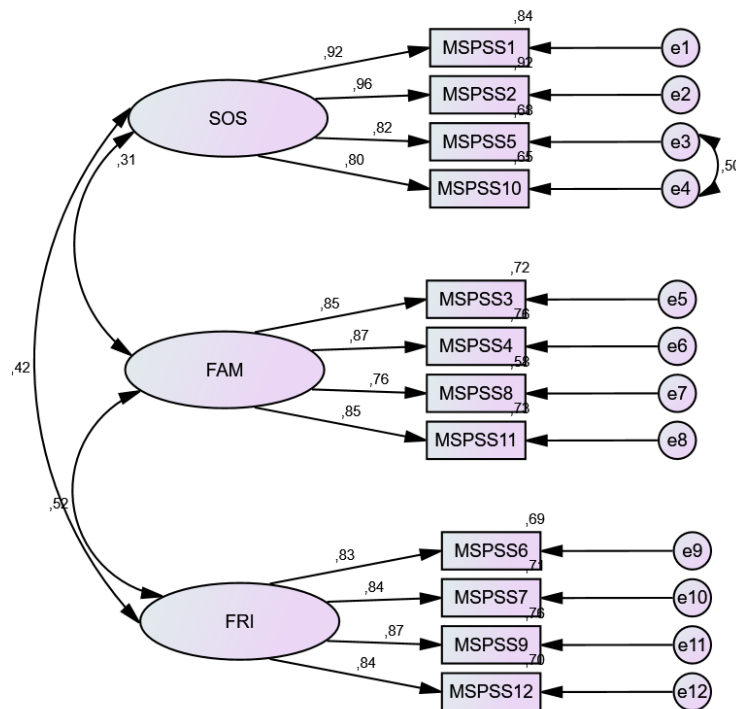
Item Analysis and Consistency Reliability of the MSPSS. Table 10 presents the results of the item and reliability analysis for the MSPSS. The corrected item-total correlations of each item score with its subscale score were in the range of .716 to .881, and all were higher than the traditional cut-off value of .30 (Hinkle et al., 1988). The acceptable range for skewness and kurtosis is below +1.5 and above -1.5 (Tabachnick & Fidell, 2013). The range of skewness (-.547 to -1.278) and kurtosis (-1.163 to .601) values indicated that the distribution was normal.

Table 10

Item Analysis.

Items	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
SO (Cronbach's alpha = .949)				
Item 1	.847	.920	-.547	-1.123
Item 2	.881	.909	-.586	-1.071
Item 5	.850	.919	-.576	-1.163
Item 10	.830	.926	-.673	-1.025
FAM (Cronbach's alpha = .906)				
Item 3	.768	.874	-1.278	.601
Item 4	.822	.853	-.822	-.459
Item 8	.716	.895	-.573	-.887
Item 11	.808	.859	-.920	-.022
FRI (Cronbach's alpha = .922)				
Item 6	.781	.886	-.727	-.206
Item 7	.800	.879	-.664	-.487
Item 9	.808	.876	-.986	.119
Item 12	.783	.885	-.754	-.440

Note. Significant others (SOS), Family (FAM), Friends (FRI).

Measurement Invariance. The results for measurement invariance are displayed in Table 11.

Configural Invariance. The three-factor configural invariance model (M1) fit the data very well (RMSEA = 0.044 [90% CI, 0.036–0.052], CFI = 0.970). Moreover, all factor loadings were significant ($p < 0.05$) and ranged from 0.41 to 0.94. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = 0.042 [90% CI, 0.035–0.050], CFI = 0.969). Moreover, ΔCFI and ΔRMSEA (-0.001 and -0.002 respectively) were within recommended guidelines, supporting metric invariance. Therefore, the researcher proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) does not fit the data well (RMSEA =

0.062 [90% CI, 0.056-0.069], CFI = .923). In addition, the ΔCFI value did not support the

scalar invariance model. Therefore, scalar invariance was not supported

Table 11

Results of tests for measurement invariance of the MSSPSS across countries

			Model fit			**Model difference (ΔM)**				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	281.89	150	.04* (.04-.05)	.97	–	–	–	–	–
M2	303.29	168	.04* (.03–.05)	.97	M2 vs. M1	21.39	18	-.00	-.00
M3	527.64	192	.06* (.06–.07)	.92	M3 vs. M2	224.35	24	.02	-.05

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index.

*M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Positive and Negative Experience (SPANE)

Descriptive Analysis and Internal Consistency

Table 12 shows the means, standard deviations and internal consistencies for the

Spanish, English, and Turkish versions. Internal consistencies for both SPANE-P and

SPANE-N are good.

Table 12

Descriptive Statistics and Internal Consistency

	Spanish (*N* = 111)			English (*N* = 121)			Turkish (*N* = 221)		
	M	*SD*	*α*	*M*	*SD*	*α*	*M*	*SD*	*α*
SPANE-P	22.90	3.98	.89	19.67	4.29	.79	18.99	3.79	.79
SPANE-N	15.59	3.92	.77	16.45	4.36	.80	16.19	4.29	.82

Table 13 shows that items namely "positive", "afraid" and "angry" would increase Cronbach's alpha if deleted. The increase of Cronbach's alpha if item "angry" is deleted is congruent with the results found in other studies (Rahm et al., 2017).

Item Analysis and Consistency Reliability of the SPANE

Table 13 presents the results of the item and reliability analysis for the SPANE. The corrected item-total correlations of each item score with its subscale score were in the range of .252 to .754, and except the value of the item "positive" (.252) all were higher than the traditional cut-off value of .30 (Hinkle et al., 1988). The range of skewness (-.441 to .786) and kurtosis (-.932 to .232) values indicated that the distribution was normal, and the current data were appropriate for the application of confirmatory factor analyses with the maximum likelihood method.

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was computed to test the two-factor structure found in previous studies (Li et al., 2013).

Firstly, the two-factor structure for the SPANE was fitted separately in the three samples. The loadings of the three models presented in Figure 1 are standardized.

The SPANE factorial structure adequately fitted the data for the three samples considered separately: Spanish (RMSEA = .056 [90% CI, 0.000–0.100], CFI = 0.982), for the English (RMSEA = .077 [90% CI, 0.035–0.116], CFI = 0.970) and for the Turkish (RMSEA = .080 [90% CI, 0.054–0.107], CFI = 0.972). For these models, all parameter estimates were statistically significant.

Table 13

Item Analysis

Item (English)	Item (Spanish)	Item (Turkish)	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
SPANE-P (Cronbach's alpha = .827)						
Positive	Positivo	Olumlu	.252	.890	.245	-.932
Good	Bueno	İyi	.677	.785	-.441	.232
Pleasant	Agradable	Keyifli	.742	.771	-.252	-.345
Happy	Feliz	Mutlu	.747	.768	-.390	-.074
Joyful	Alegre	Neşeli	.754	.769	-.386	.070
Contented	Satisfecho	Hoşnut	.586	.802	-.047	-.412
SPANE-N (Cronbach's alpha = .804)						
Negative	Negativo	Olumsuz	.681	.746	.144	-.419
Bad	Malo	Kötü	.688	.745	.211	-.406
Unpleasant	Desagradable	Keyifsiz	.648	.756	.296	-.284
Sad	Triste	Üzgün	.695	.744	.095	-.435
Afraid	Miedo	Korkulu	.347	.830	.786	-.073
Angry	Enfado	Kızgın	.382	.812	.147	-.275

Figure 6 shows the factor structure of the Spane in each of the countries.

Figure 6a- Measurement model for the SPANE in the Spanish sample

Figure 6b- Measurement model for the SPANE in the British sample

Figure 6c- Measurement model for the SPANE in the Turkish sample

Measurement Invariance

The results for measurement invariance are displayed in Table 14.

Configural Invariance. The two-factor configural invariance model (M1) fit the data very well (RMSEA = 0.044 [90% CI, 0.032–0.055], CFI = 0.974). Moreover, all factor loadings were significant ($p < 0.05$) and ranged from 0.72 to 0.85. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = 0.043 [90% CI, 0.032–0.054], CFI = 0.970). Moreover, ΔCFI and ΔRMSEA (0.004 and 0.001 respectively) were within recommended guidelines, supporting metric invariance. Therefore, it was proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) fit the data soundly well (RMSEA = 0.043 [90% CI, 0.032–0.054], CFI = .970). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 14

Results of tests for invariance of the SPANE across countries

			Model fit				Model difference (ΔM)			
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\varDelta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	128.45	69	.04 (.03-.05)	.97	–	–	–	–	–
M2	152.09	83	.04 (.03–.05)	.97	M2 vs. M1	23.64	14	.00	.00
M3	152.08	83	.04 (.03–.05)	.97	M3 vs. M2	.00	0	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.

Loneliness UCLA Scale

Descriptive Analysis and Internal Consistency

Table 15 shows the means, standard deviations and internal consistencies for the Spanish, English, and Turkish versions. Internal consistency for the UCLA is good.

Table 15

Descriptive Statistics and Internal Consistency

	Spanish (*N* = 111)			English (*N* = 121)			Turkish (*N* = 221)		
	M	*SD*	*α*	*M*	*SD*	*A*	*M*	*SD*	*α*
UCLA	41.24	9.20	.92	49.23	12.37	.94	39.63	9.91	.90

Item Analysis and Consistency Reliability of the UCLA

Table 16 presents the results of the item and reliability analysis for the UCLA. The corrected item-total correlations of each item score with its subscale score were in the range of .37 to .70, and all were higher than the traditional cut-off value of .30 (Hinkle et al., 1988). The range of skewness (-.05 to .92) and kurtosis (-1.00 to .02) values indicated that the distribution was normal, and the current data were appropriate for the application of confirmatory factor analyses with the maximum likelihood method.

Table 16

Item Analysis

Item	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
UCLA (Cronbach's alpha = .92)				
UCLA1	.56	.92	.46	-.16
UCLA2	.68	.92	.44	-.78
UCLA3	.67	.92	.68	-.46
UCLA4	.37	.93	.70	-.97
UCLA5	.62	.92	.83	-.18
UCLA6	.57	.92	.48	-.32
UCLA7	.66	.92	.50	-.79
UCLA8	.50	.92	.24	-.62
UCLA9	.44	.92	.55	-.49
UCLA10	.68	.92	.71	-.40
UCLA11	.66	.92	.40	-.69
UCLA12	.59	.92	.23	-.76
UCLA13	.59	.92	-.05	-.99
UCLA14	.70	.92	.19	-1.00
UCLA15	.43	.92	.58	-.51
UCLA16	.60	.92	.39	-.55
UCLA17	.54	.92	.05	-1.16
UCLA18	.70	.92	.09	-.95
UCLA19	.69	.92	.92	.02
UCLA20	.64	.92	.85	-.11

Confirmatory Factor Analysis

The UCLA has been considered to be a unidimensional scale by its developers (Russell, 1996). Moreover, previous confirmatory factor analyses (CFA) have supported the unidimensionality of the scale (Hartshorne, 1993; Russell, 1996). Therefore, a CFA using AMOS 25 was computed to test the unidimensional structure of the measure.

Firstly, the one-factor structure for the UCLA was fitted separately in the three samples. The loadings of the three models presented in Figure 7a, 7b and 7c are standardized.

The UCLA factorial structure adequately fitted the data for the three samples considered separately: Spanish (RMSEA = .05 [90%, .03-.07], CFI = .95), for the English (RMSEA = .06 [90%, .04-.08], CFI = .95), and for the Turkish (RMSEA = .05 [90%, .04-.07], CFI = .95). For these models, all parameter estimates were statistically significant.

Figure 7a. Measurement model for the UCLA in the Spanish sample
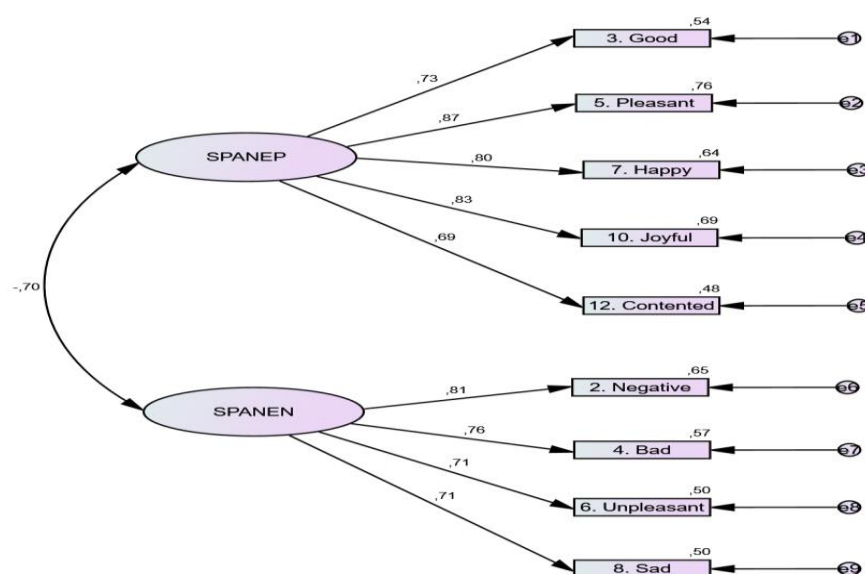
Figure 7b. Measurement model for the UCLA in the British sample
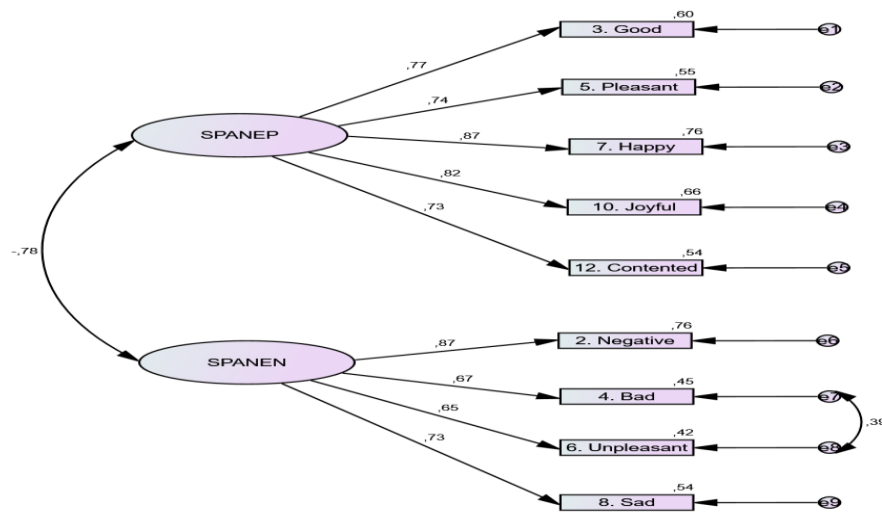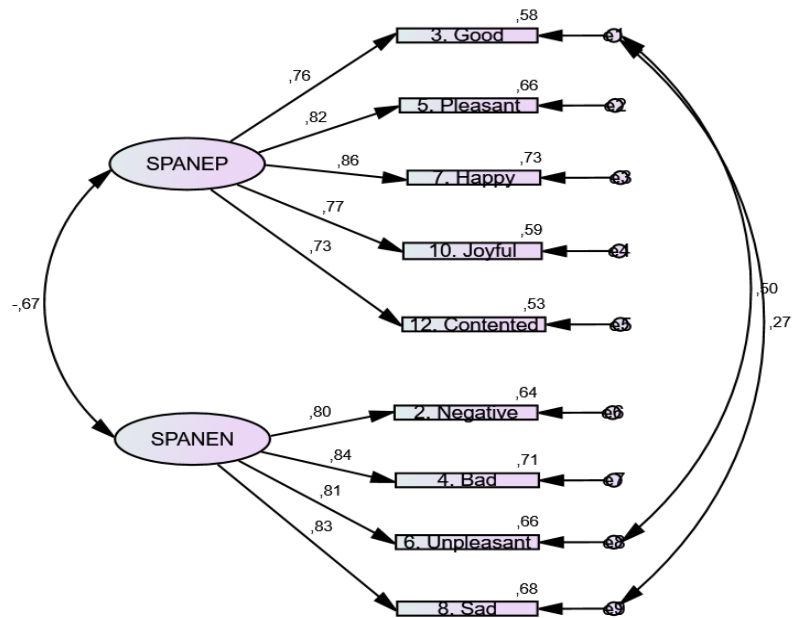

Figure 7c. Measurement model for the UCLA in the Turkish sample.

Measurement Invariance

The results for measurement invariance are displayed in Table 17.

Configural Invariance. The one-factor configural invariance model (M1) has an acceptable fit based on the RMSEA value, but a poor fit based on the CFI value (RMSEA = .05 [90% CI, .05–.06], CFI = .87). However, Raykov (2000, 2005) defends that CFI is a measure based on non-centrality and therefore is biased. Moreover, if previous models generate values of .70 for the CFI, a CFI value of ≥.85 represents progress it should be considered acceptable (Bollen, 1989).

Moreover, all factor loadings were significant ($p < .05$) and ranged from .27 to .71. The researcher tested for metric invariance model by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit based on the RMSEA value, but a poor fit based on the CFI value (RMSEA = .05 [90% CI, .05–.06], CFI = .85). However, ΔCFI and ΔRMSEA (.02 and .00 respectively) were within recommended guidelines, supporting metric invariance. The researcher proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) fit the data soundly well (RMSEA = .05 [90% CI, .05–.06], CFI = .85). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 17

Results of tests for invariance of the UCLA across countries

	Model fit				Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	1026.42	450	.05 (.05-.06)	0.87	–	–	–	–	–
M2	1142.09	488	.05 (.05–.06)	.85	M2 vs. M1	115.67	38	.00	-.02
M3	1153.15	490	.05 (.05–.06)	.85	M3 vs. M2	11.06	2	.00	.00

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Satisfaction with life (SWL)

Descriptive Analysis and Internal Consistency

Table 18 shows the means, standard deviations and internal consistencies for the Spanish, English, and Turkish versions. Internal consistency for the SWL is good.

Table 18

Descriptive Statistics and Internal Consistency

	Spanish ($N = 111$)			English ($N = 121$)			Turkish ($N = 221$)		
	M	*SD*	*α*	*M*	*SD*	*α*	*M*	*SD*	*α*
SWL	26.41	6.12	.85	21.55	7.37	.89	19.16	6.33	.78

Item Analysis and Consistency Reliability of the SWL

Table 19 presents the results of the item and reliability analysis for the SWL. The corrected item-total correlations of each item score with its subscale score were in the range of .63 to .75, and all were higher than the traditional cut-off value of .30 (Hinkle et al., 1988). The acceptable range for skewness and kurtosis is below +1.5 and above -1.5 (Tabachnick & Fidell, 2013). The range of skewness (-.16 to -.53) and kurtosis (-.74 to -1.37) values indicated that the distribution was normal.

Table 19

Item Analysis

Items	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
SWL (Cronbach's alpha = .85)				
Item 1	.63	.83	-.16	-.74
Item 2	.64	.83	-.19	-.97
Item 3	.75	.80	-.53	-.87
Item 4	.68	.82	-.48	-.83
Item 5	.65	.83	.17	-1.37

Confirmatory Factor Analysis

The CFA model was estimated and analysed separately for the three subsamples: Spanish ($\chi^2 = 11.021$; df = 5, $p = .051$, *CFI* = .976; *TLI* = .951; *RMSEA* = .105 (90% CI,

0.000–0.189)), British (χ^2 = 9.438; df = 5, p = .093, *CFI* = .988; *TLI* = .976; *RMSEA* = .086

(90% CI, 0.000–0.169)) and Turkish (χ^2 = 13.926; df = 5, p = .016, *CFI* = .968; *TLI* = .936;

RMSEA = .090 (90% CI, 0.000–0.119)). The unconstrained factor loadings can be found in
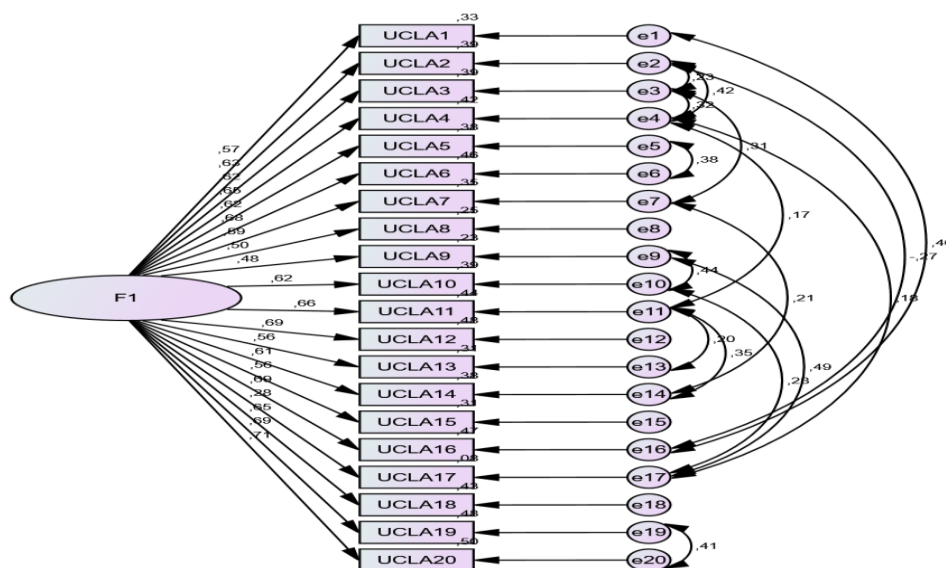
the figures 8a, 8b, and 8c.

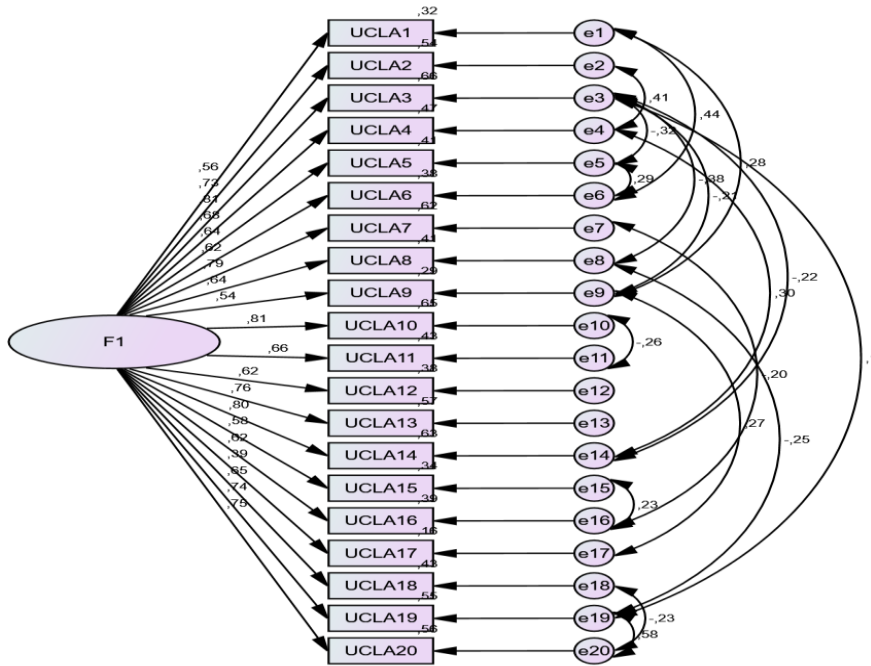Figure 8a- Measurement model for the SWL in the Spanish sample

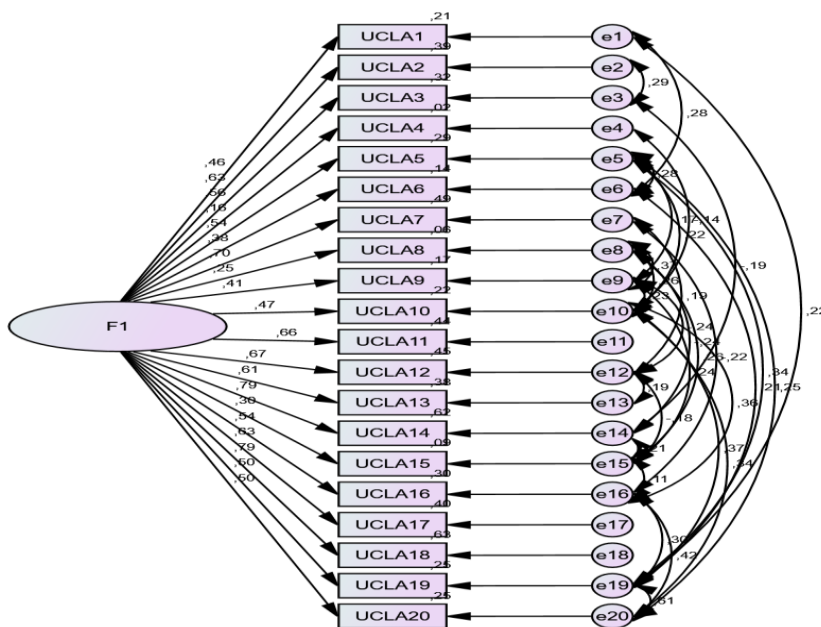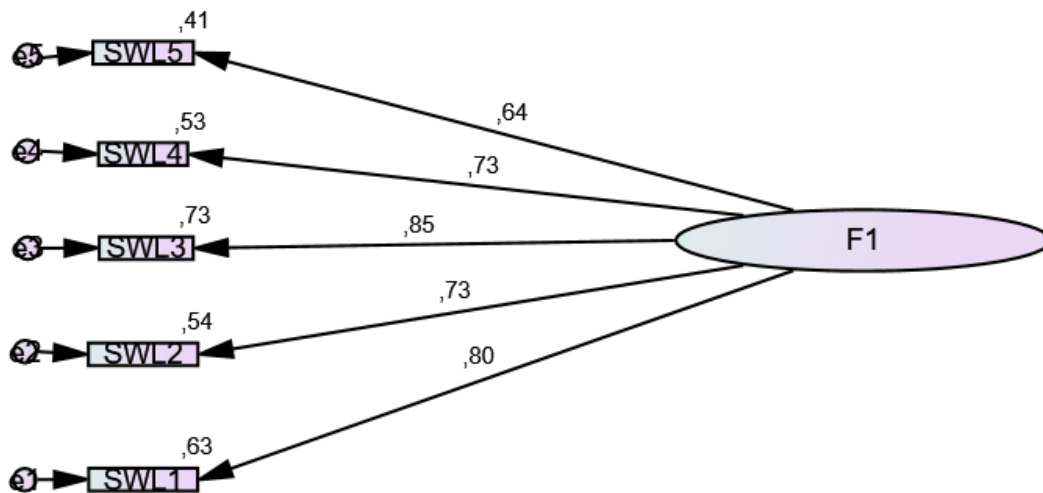Figure8b- Measurement model for the SWL in the British sample
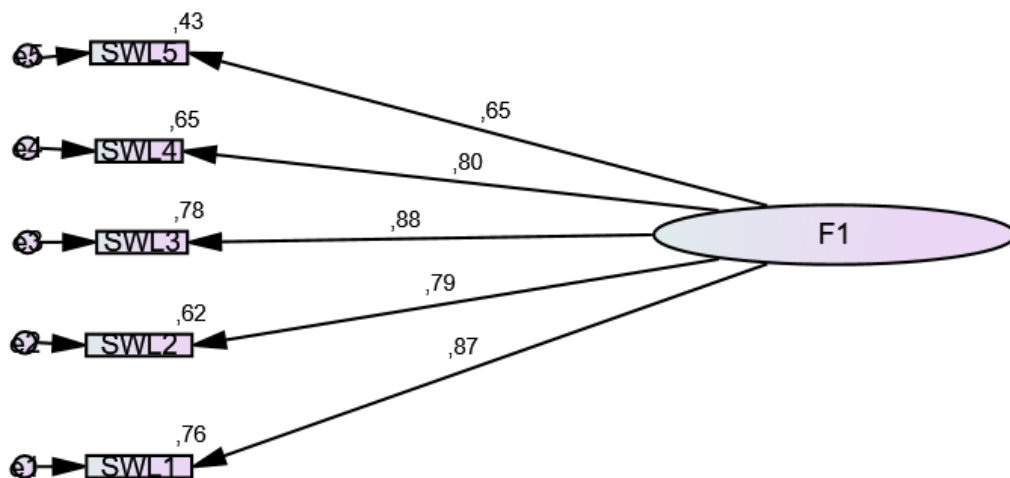
Figure 8c- Measurement model for the SWL in the Turkish sample
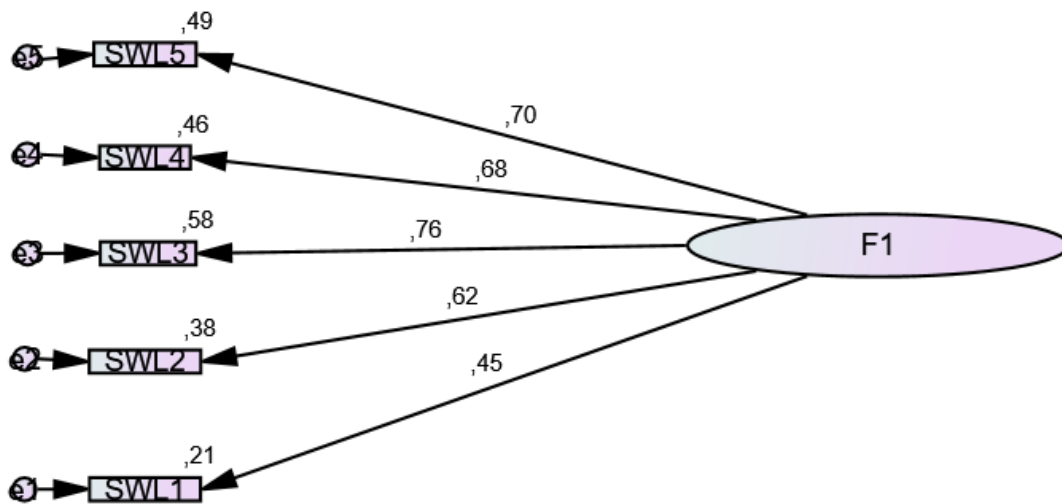
Measurement Invariance

The results for measurement invariance are displayed in Table 20.

Configural Invariance. The two-factor configural invariance model (M1) fit the data very well (RMSEA = .05 [90% CI, .03–.08], CFI = .98). Moreover, all factor loadings were significant ($p < .05$) and ranged from .64 to .85. Thus, the metric invariance model was tested by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed an acceptable fit (RMSEA = .06 [90% CI, .04–.08], CFI = .96). A ΔCFI value of -0.02 was within the criteria (ΔCFI ≤ -0.02) (Meade et al., 2008; Rutkowski and Svetina, 2014) for tests of factor loading invariance (Chen, 2007; Meade et al., 2008). Thus, metric invariance was supported.

Scalar Invariance. The scalar invariance model (M3) fit the data well (RMSEA = .06 [90% CI, .04–.08], CFI = .95). In addition, the ΔCFI and ΔRMSEA values supported the scalar invariance model.

Table 20

Results of tests for invariance across countries

	Model fit				Model difference (ΔM)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	34.40*	15	.05 (.03-.08)	.98	–	–	–	–	–
M2	60.48*	23	.06 (.04–.08)	.96	M2 vs. M1	26.08	8	.01	-.02
M3	68.78*	25	.06 (.04–.08)	.95	M3 vs. M2	8.30	2	.00	-.01

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Anxiety Trait (STAI-T)

Descriptive Analysis and Internal Consistency

Table 21 shows the means, standard deviations and internal consistencies for the Spanish, English, and Turkish versions. Internal consistencies for both STAI-T Absent and STAI-T Present are good.

Table 21

Descriptive Statistics and Internal Consistency

	Spanish (*N* = 111)			English (*N* = 121)			Turkish (*N* = 221)		
	M	*SD*	*α*	*M*	*SD*	*α*	*M*	*SD*	*α*
STAI-T Absent	19.85	4.11	.81	17.61	4.31	.88	17.89	3.56	.76
STAI-T Present	27.46	6.36	.82	31.66	8.52	.90	30.07	6.98	.86

Item Analysis and Consistency Reliability of the STAI-T

Table 22 presents the results of the item and reliability analysis for the two factors of the STAI-T. The corrected item-total correlations of each item score with its subscale score were in the range of .38 to .67, and all were higher than the traditional cut-off value of .30 (Hinkle et al., 1988). The range of skewness for trait absent (-.48 to .24), for trait present (.15 to .63) and kurtosis for trait absent (-.82 to .00) and for trait present (-1.03 to .25) values indicated that the distribution was normal, and the current data were appropriate for the application of confirmatory factor analyses with the maximum likelihood method.

Table 22

Item Analysis

Item	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
STAI-T Absent (.82)				
STAI1-T	.67	.77	.01	-.56
STAI6-T	.52	.80	-.48	.00
STAI7-T	.38	.82	.11	-.88
STAI10-T	.62	.78	-.04	-.73
STAI13-T	.53	.80	-.12	-.65
STAI16-T	.59	.78	-.09	-.60
STAI19-T	.60	.78	.24	-.82
STAI-T Present (.86)				
STAI2-T	.42	.86	.18	-.84
STAI3-T	.44	.86	.55	-.50
STAI4-T	.56	.85	.41	-.84
STAI5-T	.45	.86	.51	-.46
STAI8-T	.55	.85	.60	-.09
STAI9-T	.59	.85	.28	-.88
STAI11-T	.52	.85	.24	-.75
STAI12-T	.45	.86	.32	-1.03
STAI14-T	.39	.86	.36	-.82
STAI15-T	.62	.85	.63	.25
STAI17-T	.66	.85	.24	-.72
STAI18-T	.63	.85	.15	-.99
STAI20-T	.61	.85	.20	-.80

Confirmatory Factor Analysis

In accord with previous findings about the dimensionality of the STAI-T, a confirmatory factor analysis (CFA) using AMOS 25 was computed to test the two-factor structure found in previous studies (Maynard et al., 2010).

Firstly, the two-factor structure for the STAI-T was fitted separately in the three samples. The loadings of the three models presented in Figures 1a, 1b and 1c are standardized.

The STAI-T factorial structure adequately fitted the data for the three samples considered separately: Spanish (RMSEA = .05 [90% CI, .02–.07], CFI = .95), for the English (RMSEA = .05 [90% CI, .03–.07], CFI = .96) and for the Turkish (RMSEA = .04 [90% CI, .03–.05], CFI = .96). For these models, all parameter estimates were statistically significant. Factor loadings were low for item 2, 5 and 7 in the Spanish (.28, .31 and .24 respectively) and for item 2 and 7 in the Turkish sample (.20 and .32 respectively).

Figure 9a. Measurement model for the trait scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the Spanish sample.

Figure 9b. Measurement model for the trait scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the British sample.
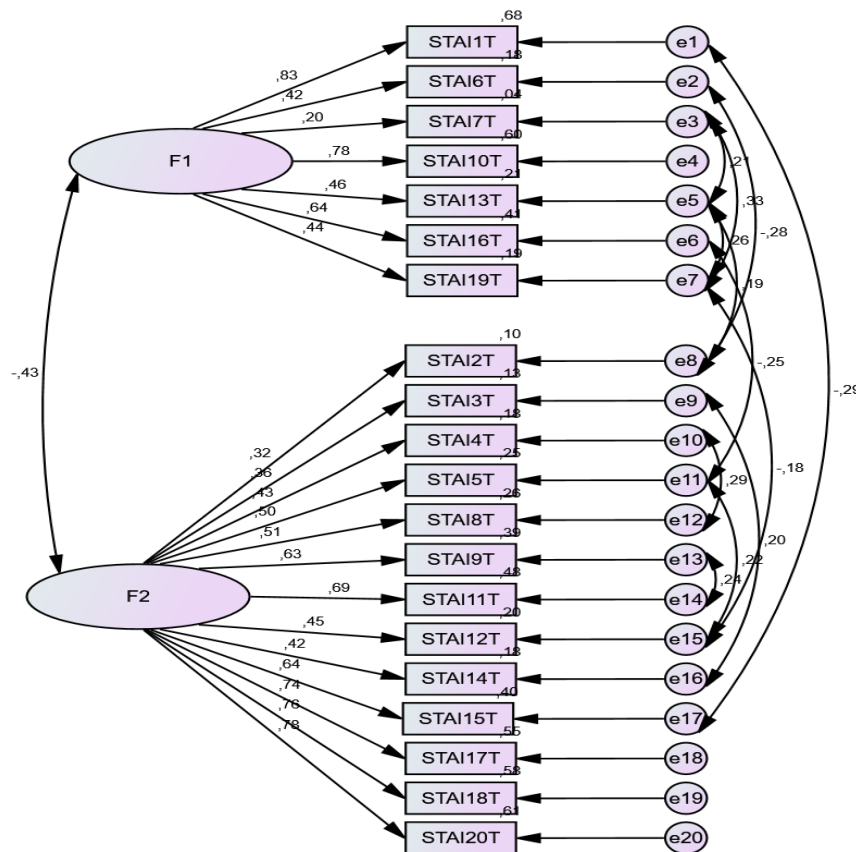
Figure 9c. Measurement model for the trait scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the Turkish sample.

Measurement Invariance

The results for measurement invariance are displayed in Table 23.

Configural Invariance. The configural invariance model (M1) model does not fit the data well based on the CFI value (RMSEA = .04 [90% CI, .03–.04], CFI = .92). However, as mentioned previously, Raykov (2000, 2005) defends that CFI is a measure based on non-centrality and therefore is biased. Moreover, if previous models generate values of .70 for the CFI, a CFI value of ≥.85 represents progress it should be considered acceptable (Bollen, 1989). In addition, all factor loadings were significant (p < .05) and ranged from .30 to .76.

The researcher tested for metric invariance model by constraining the factor loadings across country.

Metric Invariance. A constrained metric invariance model (M2) showed a poor fit based on the CFI value (RMSEA = .04 [90% CI, .03–.04], CFI = .91). Furthermore, metric invariance was supported because ΔCFI had a value of -.01. Therefore, the researcher proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) showed a poor fit (RMSEA = .05 [90% CI, .04–.05], CFI = .85). Moreover, the ΔCFI value of -.06 was over the accepted limit of -.01. Therefore, scalar invariance was not supported.

Table 23

Results of tests for invariance across countries

	Model fit				Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	730.12	459	.04 (.03–.04)	.92	–	–	–	–	–
M2	799.20	495	.04 (.03–.04)	.91	M2 vs. M1	69.08	36	0.00	-.01
M3	1004.66	501	.05(.04-.05)	.85	M3 vs. M2	205.46	6	.01	-.06

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.*

Anxiety State (STAI-S)

Descriptive Analysis and Internal Consistency

Table 24 shows the means, standard deviations and internal consistencies for the Spanish, English, and Turkish versions. Internal consistency is good in the three samples.

Table 24

Descriptive Statistics and Internal Consistency

	Spanish (*N* = 111)			English (*N* = 121)			Turkish (*N* = 221)		
	M	*SD*	*α*	*M*	*SD*	*α*	*M*	*SD*	*α*
State Anxiety	11.99	3.97	.83	13.17	4.49	.90	13.22	3.33	.74

Item Analysis and Consistency Reliability of the State Anxiety short form

Table 25 presents the results of the item and reliability analysis for the State Anxiety short form. The corrected item-total correlations of each item score with its subscale score were in the range of .49 to .65, all were higher than the traditional cut-off value of .30 followed previously in the other scales (Hinkle et al., 1988). The range of skewness (-.30 to 1.01) and kurtosis (-.86 to .14) values indicated that the distribution was normal, and the current data were appropriate for the application of confirmatory factor analyses with the maximum likelihood method.

Table 25

Item Analysis

Item	Corrected item-total correlation	Cronbach's alpha, if item deleted	Skewness	Kurtosis
SAS (Cronbach's alpha = .80)				
SAS 1	.63	.75	.20	-.86
SAS 2	.54	.77	1.01	.15
SAS 3	.49	.78	.69	-.32
SAS 4	.52	.78	-.30	-.80
SAS 5	.65	.74	-.21	-.86
SAS 6	.51	.78	.93	.14

Confirmatory Factor Analysis

Firstly, the structure for the six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI) was fitted separately in the three samples. The loadings of the three models presented in Figure 10a, 10b and 10c are standardized.

The factorial structure adequately fitted the data for the Spanish sample (RMSEA = .00 [90% CI, .00–.10], CFI = 1.00) and for the Turkish (RMSEA = .00 [90% CI, .00–.07], CFI = 1.00). However, the factorial structure fitted poorly the data for the British sample based on the value of the RSMEA (RMSEA = .07 [90% CI, .00–.15], CFI = .99). Nevertheless, the literature shows that with small df (df = 7 in the British sample) RMSEA could falsely indicate a poor fitting model (Kenny et al., 2015). For these models, all parameter estimates were statistically significant.
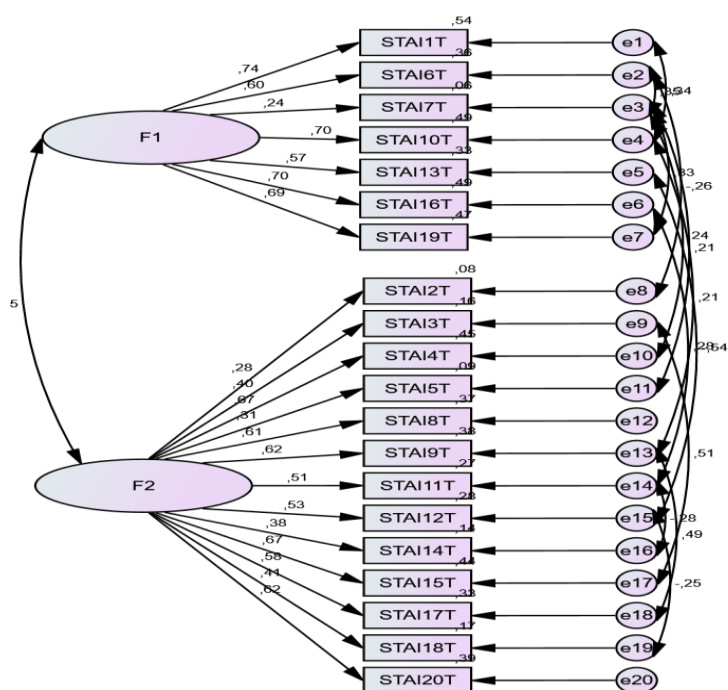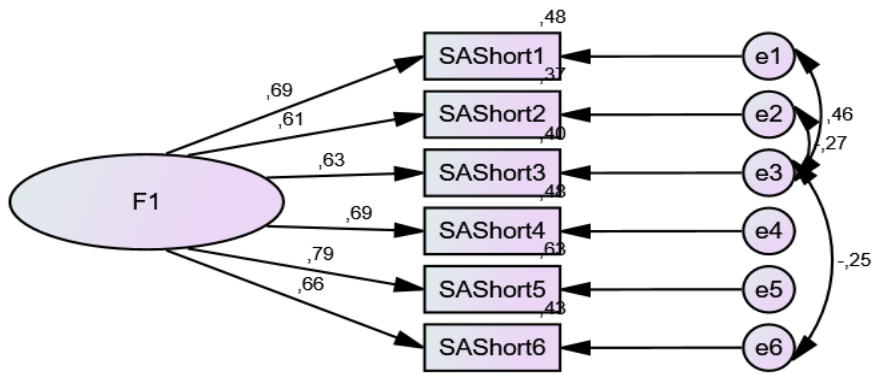
Figure 10a. Measurement model for the six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the Spanish sample.
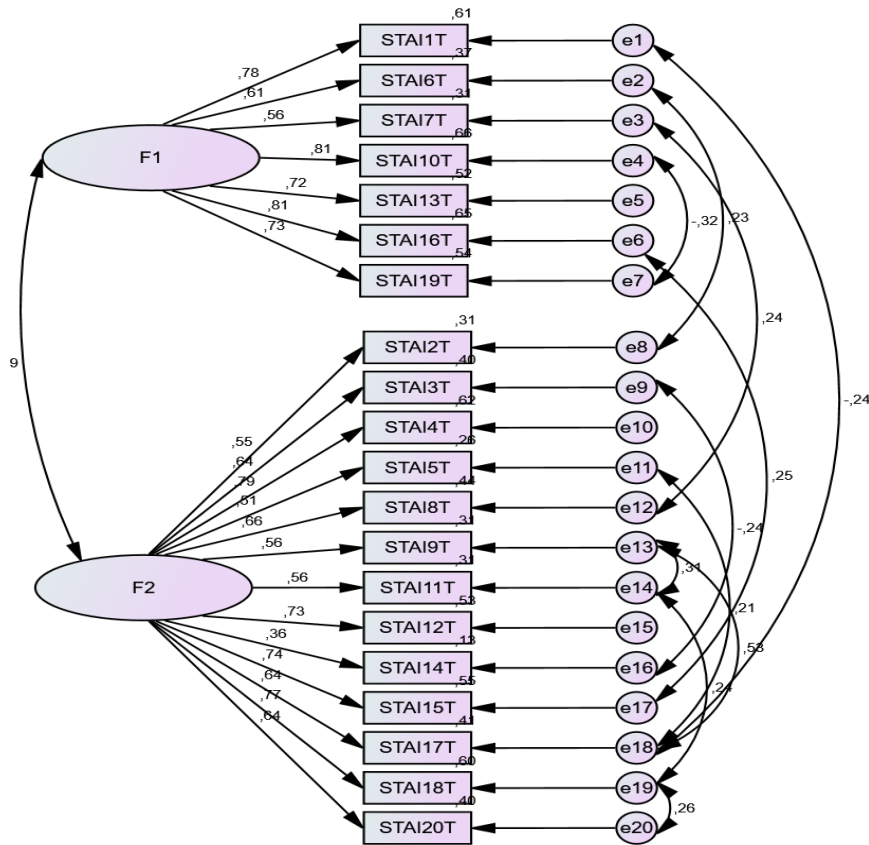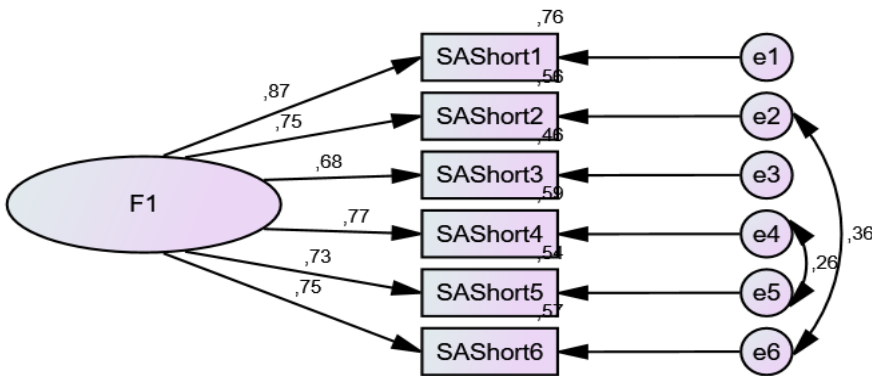

Figure 10b. Measurement model for the six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the British sample.
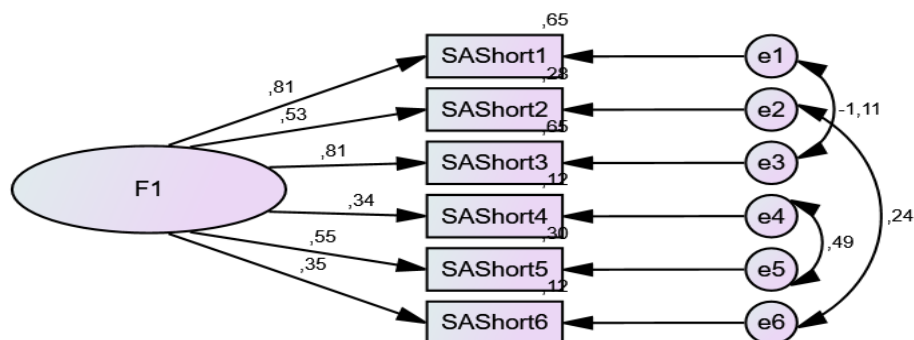
Figure 10c. Measurement model for the six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI) in the Turkish sample.

Measurement Invariance

The results for measurement invariance are displayed in Table 26.

Configural Invariance. The configural invariance model (M1) does not fit the data well (RMSEA = .09 [90% CI, .07–.11], CFI = .93). All factor loadings were significant ($p < .05$) and ranged from .61 to .79. The researcher tested for metric invariance model.

Metric Invariance. A constrained metric invariance model (M2) showed a poor fit (RMSEA = .09 [90% CI, .07–.10], CFI = .90). Metric Invariance was not supported. However, it was proceeded to test for scalar invariance.

Scalar Invariance. The scalar invariance model (M3) showed a poor fit (RMSEA = .09 [90% CI, .07–.10], CFI = .89).

Table 26

Results of tests for invariance of the STAI State short form across countries

	Model fit				Model difference (*ΔM)*				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	85.87	18	.09 (.07–.11)	.93	–	–	–	–	–
M2	123.18	28	.09 (.07–.10)	.90	M2 vs. M1	37.31	10	0.00	-.03
M3	136.75	30	.09 (.07–.10)	.89	M3 vs. M2	13.57	2	0.00	-.01

*Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *$p < 0.05$.*

Discussion

The rise of electronic devices usage and SNS has created a strong interest in researchers who want to know how this relates to well-being and mental health. The results found in the literature are mixed and a strong heterogeneity can be found across studies. There is a lack of studies contributing with knowledge about which psychological construct or individual differences are the possible mediators or moderators in the relationships between SNS use and mental health outcomes (Faelens et al., 2021). Some recent studies have suggested some psychological constructs as possible mediators. For instance, Verduyn

et al., (2017) focused on social comparison. However, more research is needed to contribute to the literature in this area providing an understanding of other psychological factors such as perceptions of technology and SNS usage that could be related to well-being and mental health outcomes. Moreover, the literature shows that social comparison has been examined in terms of the relationship between the construct and the usage of SNS but there are no specific measures of the social comparison that are triggered by the mere usage of SNS. Despite this, with the aim of examining SNS use, some studies have developed new measures. However, the majority of these measures have been focused on constructs that are more related to dependence or non-adaptive usage of SNS instead of the usual usage (e.g., Rosen et al., 2013) and without consideration of the psychometric properties of the new measures (e.g., Frison & Eggermont, 2016). Therefore, the aim of this study was to develop new measures of social comparison, well-being perceptions, and anxiety perceptions in relation to electronic devices and SNS usage. Furthermore, another objective of this study was to evaluate the psychometric properties of these measures, engendering assurance that they could be used in three different countries (Spain, UK, and Turkey). Thus, this study is addressing another gap in the literature, which is the lack of cross-cultural research. This is an important gap to address because technology and SNS use could impact differentially on well-being due to cultural diversity (Lee et al., 2016).

Finally, standardized measures also were submitted to psychometric properties evaluation. The reason of this was that in the next chapter the researcher aims to establish the relationships between the new measures (well-being perceptions, anxiety perceptions, social comparison related to electronic devices and SNS usage), and the general measures of well-being and anxiety widely used in psychological research and practice.

For the new developed scales EFA was conducted to examine the underlying dimensionality. Then, through CFA the researcher tested the results of the EFA, using AMOS

25, on the same sample of each country for each measure to obtain an estimate of goodness of fit. This sometimes followed the deletion of items that had violated statistical criteria. Finally, multigroup measurement invariance was conducted to new measures and standardized ones.

General Technology Usage Activities

Two factors were retained in the general technology usage activities' subscale. Both factors showed good reliability in each of the three countries. Factor 1 is related to activities made on SNS (e.g., click 'like', update status) and factor 2 is formed by two activities (make calls and receive calls), which are not related to SNS. Therefore, Factor 1 is labelled SNS Activities and Factor 2 labelled Activities. Measurement invariance analyses show that metric invariance was not supported based on ΔCFI. This shows that caution is needed in interpreting outcomes related to such findings.

Well-being Perceptions

In this subscale two dimensions were found: Well-being Positive and Well-being Negative. Factor 1 Well-being perceptions Positive and Factor 2 Well-being perceptions Negative. Moreover, alpha values were above .70 for both factors in the three countries. Measurement invariance was supported at the configural, metric, and scalar models. In summary, the present study showed that the Well-being perceptions scale operates similarly across groups.

Anxiety Perceptions

Results found in the anxiety perceptions scale showed a bifactor dimensionality. One factor is more related to social aspects (e.g., Receiving messages of people through different social networks initiates feelings of anxiety in me) and the other factor seems to be related to cognitive aspects (e.g., Seeing lots of different news and information online initiates feelings of anxiety in me). Therefore, Factor 1 is labelled Anxiety Perceptions Cognitive and Factor 2

as Anxiety Perceptions Social. Alpha values were above .60 and .70 for both factors in the three countries. Finally, for this scale measurement invariance was supported at the configural, metric, and scalar models.

Social comparison

In the scale of social comparison, the results showed high reliability for the four items that form the scale. Only one factor was extracted through the EFA. Moreover, ΔCFI and ΔRMSEA were within recommended guidelines, supporting metric and scalar invariance. Therefore, the social comparison scale can be used with confidence in the three countries covered in this study.

Satisfaction With Life

Testing the measurement invariance of the SWL showed support for a unidimensional structure (configural M1). Moreover, results supported equivalent factor loadings (metric M2) and scalar invariance (M3).

Cross-cultural and measurement invariance of the SWL scale is difficult to achieve (Emerson et al., 2017). However, the present study has achieved it, making possible to make comparisons between the three countries in this construct and its relationship with technology and SNS usage.

Loneliness (UCLA)

While the UCLA 20 items has been widely used to measure loneliness, its cross-cultural validity has not been established, because there is a lack in the literature testing the measurement invariance of this measure (Hudiyana et al., 2021). Loneliness is a complex construct and as measured by the UCLA could be expressed differently across countries (Hudiyana et al., 2021). There are differences in the feelings of loneliness in individuals from collectivistic cultures and those from individualistic cultures. For instance, the lack of

interpersonal relationships is associated with loneliness in individualistic cultures while the absence of ties with groups as family is more associated with loneliness in collectivistic cultures (Lykes & Kemmelmeier, 2014).

Results found in the measurement invariance testing in this study revealed that the model needed to be adapted in order to obtain a better fit to the data by implementing several modifications, which consist of allowing error covariance between some of the items. Even with those modifications, the configural model (M1) still fits the data poorly based on the CFI value. Therefore, this indicates that the one factor UCLA scale of 20 items may not be an appropriate measure for cross-cultural studies of loneliness. Perhaps the use of fewer but more discriminatory items is the way forward along with more subscales. However, in this study, uni-dimensionality was used to maintain parsimonious models.

Positive And Negative Experience (SPANE)

The two-factor structure of the Scale of Positive and Negative Experience met the model fit cut-off criteria in the three samples. Moreover, measurement invariance analyses show evidence of metric and scalar invariance. Therefore, the English, Spanish, and Turkish versions of the SPANE show good psychometric properties and cross-cultural validity.

Multidimensional Scale of Perceived Social Support

The three-factor configural invariance model of the multidimensional scale of perceived social support (MSPSS) fit the data very well. Furthermore, the measurement invariance analyses show that metric invariance is supported but not the scalar invariance.

State-trait Anxiety Inventory

The one-factor model of the trait anxiety measure through the State-trait Anxiety Inventory did not show a good fit to the data. Furthermore, when measurement invariance

was tested the researcher found inadequate support for metric and scalar invariance. Thus, the measure is not considered invariant across the three countries.

The six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI) was fitted separately in the three samples and showed different results. The factorial structure adequately fitted the data for the Spanish sample and for the Turkish. However, the factorial structure fitted poorly the data for the British sample based on the value of the RSMEA. Nevertheless, the literature shows that with small df (df = 7 in the British sample) RMSEA could falsely indicate a poor fitting model (Kenny et al., 2015). However, the state scale was found to be measurement variant because metric invariance was not supported. Furthermore, the scalar invariance model showed a poor fit.

Limitations and Future Directions

The current study has developed new scales of well-being perceptions, anxiety perceptions and social comparison in relation to electronic devices and SNS usage. Moreover, the current study assessed the cross-cultural measurement invariance of these new measures and of widely used validated psychological scales. Therefore, it contributes with knowledge in the literature and reveals some potentially useful results. However, this study is not without limitations. Firstly, sample sizes are small in the three countries. Secondly, due to practical concerns, this study only considered three countries. Therefore, replications with other cultural samples are necessary in future studies to support the current findings. Furthermore, the current study used online survey methodology to collect the data.

<div align="center">

Conclusion

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Overall, the findings suggest that the new measures are well-suited to assess well-being, anxiety perceptions, and social comparison in relation to electronic devices and SNS usage in the three different countries. This study offers an outstanding contribution in the

scope of electronic devices and SNS usage, as the new measures can be used by practitioners and mental health professionals. This was an ambitious project that grappled with the difficulties of language, cultural perceptions, and values in the context of key psychological constructs. Despite some notable differences across culture, there are remarkable similarities that provide confidence in the measures across divergent samples. Some of the problems identified (e.g., excessive error covariances in the UCLA measure) may be related to the configuration of the measure and overlap in some of the items.

In the next chapter the researcher will examine the cross-cultural relationships between the perceptions and the validated measures of well-being and anxiety. In order to achieve this aim, multigroup structural invariance analyses will be conducted to establish the latent variables' associations with each other (Vanderberg & Lance, 2000). Moreover, direct and indirect paths will be analysed to assess if social comparison mediates the relationship between perceptions and overall levels of well-being and anxiety.

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Chapter 4- Exploring associations among technology usage, perceptions of well-being, anxiety, and mental health levels. The mediating role of social comparison

Abstract

In the literature there is a lack of consensus about how technology usage and social networks sites usage are associated with well-being, and anxiety. There is a lack of consensus in the measures used. In addition, most of the studies use overall measures of the construct without specification in technology usage. Therefore, the researcher of this thesis developed new measures, which showed good psychometric properties in the previous chapter. Therefore, the aim of this chapter was to assess the relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours, and affective states in university students in three countries (Spain, UK and Turkey). The current study will fill the gap in knowledge not addressed by prior studies as it considers social comparison triggered by the mere usage of SNS as a mediator. The findings suggest that the relationships between well-being and anxiety perceptions in relation to electronic devices and SNS usage, loneliness, satisfaction with life, perceived social support, positive-negative experience, and trait-state anxiety, are different based on the different cultures. Despite the differences across culture, this study found that social comparison as a construct specifically related to SNS usage assessed through the measure developed by the researcher, seems to mediate the relationships between perceptions of anxiety and well-being, satisfaction with life, loneliness, and trait anxiety. When mediating the relationships between different SNS types and well-being and anxiety perceptions, it seems that the mediating role of social comparison is of relevance for Instagram, and not for Facebook. Another important finding is the effect of SNS activities to well-being and anxiety perceptions.

Introduction

The aim of this chapter is to explore the relationships between perceptions of well-being, anxiety, levels of loneliness, perceived social support, satisfaction with life, positive, negative experiences, and anxiety in university students from England, Spain, and Turkey. Moreover, another aim of this study is to examine the mediating role of social comparison in these relationships.

Given the increasing popularity of electronic devices and SNS usage, researchers have been interested in the effects of its usage on individuals' well-being and mental health. However, providing an answer to this question has proven difficult.

Numerous studies found that frequency of use of SNS has a detriment effect on well-being (Appel et al., 2020; Steers, 2015). By contrast, other studies have reported that specific uses of SNS can increase well-being (Valkenburg & Peter, 2011). The inconsistent results found in the literature maybe are due to inconsistencies in the measures used, the focus on specific platforms that lose users with the development of new SNS platforms. For instance, most of the studies are based on Facebook (Rosen et al., 2013). Nevertheless, results found by the survey research data conducted by the Pew Research Center (2018) indicated that 42 percent of Facebook users disengaged from the platform in 2017. Furthermore, differences in the activities of SNS usage could explain the inconsistent results that have been found in the research about the relationship between SNS usage and well-being (Wang et al., 2018). Another limitation found in the literature consists of the focus on dependency on technology or anxiety for being without technology (Rosen et al., 2013), and there is a lack of research assessing the common use of electronic devices, SNS, and its impact on mental health (Scott et al., 2020). Therefore, more research is needed to contribute to the literature in this area providing an understanding of other psychological factors such as perceptions of technology

and SNS usage that could be related to well-being and mental health outcomes. Regarding social comparison, the literature shows that this psychological construct has been examined in terms of the relationship between the construct and the usage of SNS (Verduyn et al., 2017) but there are not specific measures of social comparison when the process is triggered by the mere usage of SNS. In order to achieve a more valuable understanding of results, researchers need to use consistent, specific measures, and consider different cultural settings. Cross-cultural studies will contribute with knowledge in this area of research due to the use of several large samples with the same timeline, methodology, and statistical analysis (Laconi et al., 2018). However, if researchers aim to conduct cross-cultural research, it is of sum importance to test for measurement invariance across cultures before making cross-cultural comparisons (Cheung & Montasem, 2016). In the previous chapter the researcher tested for the measurement invariance of the scales, therefore this chapter aims to compare cross-culturally the relationships between the variables of interest. Specifically, the aims of the structural models presented in this chapter are to contribute with knowledge to the literature about how both new scales, the anxiety and well-being perceptions related to technology usage and social networks sites usage (assessed through the measures developed in this thesis) are associated with overall measures of well-being (satisfaction with life, loneliness, negative and positive experience, perceived social support) and anxiety (trait and state anxiety). In addition, there is also a lack of consensus in the literature about how the frequency of technology usage is associated with specific measures of perceptions of anxiety and well-being related to the usage of technology and social networks sites. The reason behind this gap in the literature is that these measures are new. Therefore, structural models created between SNS types and General Technology Usage: Activities, with an effect on anxiety perceptions and well-being perceptions, will fill the gap in the literature, contributing with valuable knowledge. It is important to test how social comparison specifically related to

technology and SNS is mediating the previous mentioned relationships between the constructs. Accordingly, social comparison is included in each of the model presented in this chapter.

Current Research

The aim of this study was to assess the relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours, and affective states in university students in three countries (Spain, UK and Turkey). The focus on students was appropriate because of the high frequency of SNS use in this population (Duggan et al., 2015). Additionally, the literature shows that a stress on mental health is present on students during this period because students leave home of origin or school to face new challenges (Arnett et al., 2014; Hernández-Torrano et al., 2020). The current study will fill the gap in knowledge not addressed by prior studies as it considers social comparison triggered by the mere usage of SNS as a mediator. Moreover, this study includes a cross-cultural comparison that adds more value to the findings, and it allows the validation of the new measures. More research focused on different cultural settings is needed, as cultural research in psychology has shown that norms for social support seeking, satisfaction with life and well-being factors, differ across cultures (Liu et al., 2018).

Method

Participants and Procedure

The same samples (Spanish, British, and Turkish) from the previous chapter, were used in this chapter.

Materials

The constructed measure consists of a 34-item measure comprising general technology usage (devices, activities, SNS and applications), perceptions of anxiety, perceptions of well-being and social comparison.

General Technology Usage: Devices

A total of 5 digital devices that are considered the most used among the average university student were included in the questionnaire. For these items, the frequency response scale of 10-point Likert used by previous research (Rosen et al., 2013) was adopted. This response scale includes the following options: never, once a month, several times a month, once a week, several times a week, once a day, several times a day, once an hour, several times an hour, and all the time. The response scale ranged from 1 "never" to 10 "all the time". Higher scores indicated higher frequency of devices usage.

General Technology Usage: Activities

The scale is formed by two dimensions. Dimension 1 is formed by 5 activities made on SNS (e.g., click 'like', update status) and dimension 2 is formed by 2 activities (make calls and receive calls), which are not related to SNS. The instruction was 'Please indicate how often you do each of the following activities on any device (mobile phone, laptop, desktop, tablet etc.)'. These items were rated with the 10-items frequency response scale (Rosen et al., 2013). The response scale ranged from 1 "never" to 10 "all the time". Higher scores indicated

higher frequency of activities carried out. The reliability obtained through Cronbach's Alpha for this study is $\alpha = .83$ for SNS activities and $\alpha = .86$ for Calls activities in the Spanish sample: $\alpha = .78$ and .93 for SNS activities and Calls activities in the British sample: $\alpha = .76$ and .61 for SNS activities and Calls activities in the Turkish sample.

General Technology Usage: Social Network Sites and Applications

Social network site types and applications was measured through the frequency assessment of Instagram, WhatsApp use, and Facebook. The items were introduced by "Please indicate how often you use each of the following social networks and applications". Moreover, the three items were rated with the 10-items frequency response scale created by Rosen et al., (2013), which includes: never, once a month, several times a month, once a week, several times a week, once a day, several times a day, once an hour, several times an hour, and all the time. The response scale ranged from 1 = "never" to 10 "all the time". Higher scores indicated higher frequency of social network sites and applications usage.

Anxiety Perceptions Related to Electronic Devices and Social Network Sites Usage

The anxiety perceptions scale is formed by two factors. One factor consists of 4 items related to social aspects (e.g., Receiving messages of people through different social networks initiates feelings of anxiety in me) and the other factor consists of 3 items related to cognitive aspects (e.g., Seeing lots of different news and information online initiates feelings of anxiety in me). Alpha values were above .60 and .70 for both factors in the three countries. Participants indicated the answers on a 7-point Likert-scale ranging from 1 (Very strongly agree) to 7 (Very strongly disagree). The scores were reversed in the analysis of the data. Therefore, higher scores indicated higher frequency of devices and social network sites

usage. Reliability tests resulted in alpha values above .60 and .70 for both factors in the three countries.

Well-being Perceptions Related to Electronic Devices and Social Network Sites Usage

This scale consists of two dimensions: Well-being Positive and Well-being Negative. Alpha values were above .70 for both factors. Well-being Positive is formed by 5 items and Well-being Negative consists of 3 items. Participants indicated the answers on a 7-point Likert-scale ranging from 1 (Very strongly agree) to 7 (Very strongly disagree). The scores were reversed on both factors. Therefore, higher scores indicate higher perceptions of well-being related to electronic devices and social network sites, either positive or negative. Reliability tests resulted in alpha values above .70 for both factors in the three countries.

Social Comparison Related to Electronic Devices and Social Network Sites Usage

The social comparison scale is formed by 4 items. These items are based on what generally seems to occur in the context of social comparison when using SNS (e.g., "People I see on social networks seem to have better lives than me". Also, the 7-point Likert-scale was used in these items, as above. The response scale ranges from 1 (Very strongly agree) to 7 (Very strongly disagree). The scores were reversed, and higher scores indicate higher social comparison related to electronic devices and social network sites usage. Reliability tests resulted in alpha values of .86 for the Spanish sample, .86 for the UK sample and .79 for the Turkish sample.

Validated Questionnaires

Also, validated questionnaires of well-being and anxiety were administered to examine the relationships between the studied variables. For well-being the validated scales used, included aspects of social and psychological well-being. The different scales used are presented below.

The Satisfaction With Life (Dianer et al., 1985) is formed by 5 items using a 7-point scale that ranges from 7 strongly agree to 1 strongly disagree. Scores were nor reversed, as higher scores indicate higher levels of satisfaction with life. The reliability test obtained for this study resulted in alpha values of .85 in the Spanish sample, .89 in the British sample, and .78 in the Turkish sample.

The UCLA Loneliness Scale (Russell, 1996) is formed by 20 items. The response scale ranges from O ("I often feel this way"), S ("I sometimes feel this way"), R ("I rarely feel this way"), and N ("I never feel this way"). The scores are O's =4, all S's =3, all R's =2, and all N's =1. Therefore, higher scores indicate higher levels of loneliness. In this study, reliability tests resulted in Alpha values of .92 in the Spanish sample, .94 in the British sample, and .90 in the Turkish sample.

The Scale of Positive and Negative Experience (SPANE; Dianer et al., 2009) includes 12 items. The response scale range from 1 to 6: Very Rarely or Never = 1, Rarely = 2, Sometimes = 3, Often = 5, Very Often or Always = 6. Higher scores indicate the higher experience of positive or negative feelings. Reliability tests resulted in Alpha values of .89 for the Positive dimension of the SPANE, and .77 for the Negative dimension in the Spanish sample; α = .79 and .80 for the Positive and Negative dimensions respectively in the British sample; and α = .79 and .82 for the Positive and Negative dimensions in the Turkish sample.

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988) is a 12-items measure with a response scale from 1 "Very Strongly Disagree" to 7 "Very Strongly Agree". Higher scores indicate higher levels of perceived social support. The reliabilities obtained through Cronbach's Alpha for the dimensions of the scales are above .80. Concretely, alpha values are .82 for Significant others (SOS), .92 for Family (FAM) and .89 for Friends (FRI) (.89) in the Spanish sample; .95 for SOS, .90 for FAM and .95 for FRI in the British sample; .94 for SOS, .90 for FAM, and .91 for FRI in the Turkish sample.

For anxiety, the validated measure was The State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983). For the Trait form of the STAI, 20-item measure was used. These items are rating on a 4-point scale from 1 = "Almost Never" to 4 = "Almost Always". Higher scores indicate greater trait anxiety. In this study, the Alpha values were above .70 in each of the dimensions (trait absent and trait present) for each country. Specifically, alpha values were .81 in Trait Absent, and .82 in Trait Present in the Spanish sample; α = .88 and .90 respectively in Trait Absent and Trait Present in the British sample; and α = .76 and .86 respectively in Trait Absent and Trait Present in the Turkish sample.

In addition, the 6-items short form of State anxiety was used. These items are also rated on the 4-point scale from 1 = "Almost Never" to 4 = "Almost Always". Higher scores indicate greater anxiety. Reliability tests in this scale resulted in Alpha values of .83 in the Spanish sample, .90 in the British sample, and .74 in the Turkish sample.

Statistical Analyses

The study used a cross-sectional, quantitative design. Multigroup Structural Invariance was conducted using AMOS (Version 27) (Arbuckle, 2014). Multigroup structural invariance involves comparing configural models with more restrictive models. The model fit was assessed with the consultation of a range of the more reliable fit indices (Hu & Bentler, 1999)

namely, relative chi-square statistic (χ2/df), the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Squared Residual (SRMR). Models were considered to adequately fit the data at values of χ2/df ≤ 2 to 3, ≤.08 for the RMSEA (Browne & Cudeck, 1993), ≥.90 for the CFI and TLI, (Bentler & Bonett, 1980) with values above .95 preferred and values ≤.08 for SRMR. Moreover, Chi-squared difference tests and changes in goodness of fit indices: ΔCFI > − .010, ΔRMSEA < .015, and ΔSRMR < .010; are used to assess invariance. These criteria are chosen based on the agreed cut-off points found in the literature (e.g., Chen, 2007; Hu & Bentler, 1999). In addition, direct and indirect paths were analysed to test the relationships between the constructs of the study.

Results

Anxiety Perceptions, Social Comparison, and Satisfaction With Life

The standardized factor loadings and factor covariance of each causal model by country are shown in figures 1a, 1b and 1c. The variance explained on SWL ranges from 8% to 23%. Moreover, factor loadings were >.40 across all three samples.

Figure 1a. Structural model Anxiety Perceptions, Social Comparison, and Satisfaction with Life in the Spanish sample.

Figure 1b. Structural model Anxiety Perceptions, Social Comparison, and Satisfaction with Life in the British sample.

Figure 1c. Structural model Anxiety Perceptions, Social Comparison, and Satisfaction with Life in the Turkish sample.

Structural Invariance

The full structural model was assessed using the same fit indices and cut-off scores as in the CFA models. First, the full model was tested with baseline values. Model 1 (M1) corresponds to the unconstrained model, which indicated an adequate fit to the data (χ^2 = 407.85; df = 285, p = .000, *CFI* = .95; *TLI* = .94; *RMSEA* = .03 (90% CI, .02–.04). Model 2 (M2) (measurement weights) ($\chi2$ = 436.30; df = 309, p = .000, CFI = .95; TLI = .94; RMSEA = .03 (90% CI, .02–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data adequately (χ^2 = 443.22; df = 315, p = .000, *CFI* = .95; *TLI* = .94; *RMSEA* = .03 (90% CI, .02–.04). ΔCFI had a value of .00 and therefore structural invariance was met. The researcher proceeded to constrain the structural covariances in model 4 (M4). M4 fits the data well (χ^2 = 448.24; df = 321, p = .000, *CFI* = .95; *TLI* = .94; *RMSEA* = .03 (90% CI, .02–.04). When structural covariances were constrained M4 did not significantly differ from the M3 as ΔCFI had a value of .00.

Table 1

Results of tests for invariance across countries

			Model fit			Model difference (*ΔM*)			
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	407.85*	285	.03 (.02-.04)	.95	–	–	–	–	–
M2	436.30*	309	.03 (.02–.04)	.95	M2 vs. M1	28.45	24	.00	.00
M3	443.22*	315	.03 (.02–.04)	.95	M3 vs. M2	6.92	6	.00	.00
M4	448.24*	321	.03 (.02–.04)	.95	M4 vs. M3	5.02	6	.00	.00

Direct Paths

The direct paths with beta coefficients for the unconstrained model (M1) in each sample are shown in Figure 1a, 1b and 1c. Results indicated that the Anxiety Perceptions factor 1 cognitive did not have a significant direct effect with social comparison in any of the three samples: Spanish (β = -.01, p > .05), British (β = .02, p > .05) and Turkish (β = -.17, p > .05). However, Anxiety Perceptions factor 2 social had a significant direct effect with social comparison in the three samples: Spanish (β = .54, p < .05), British (β = .72, p < .001) and Turkish (β = .71, p < .001).

The direct effect of Anxiety Perceptions factor 1 cognitive on Satisfaction with life was not significant: Spanish (β = .22, p > .05), British (β = -.12, p > .05) and Turkish (β = .08, p > .05). Moreover, factor 2 social was also not significant: Spanish (β = -.38, p > .05), British (β = .11, p > .05) and Turkish (β = -.24, p > .05).

Regarding the direct effect from social comparison to satisfaction with life, results showed a significant effect in the two of the samples but was not significant in the Spanish sample: Spanish (β = -.17, p > .05), British (β = -.49, p < .05) and Turkish (β = -.33, p < .05).

Indirect Effects

Anxiety perceptions factor 1 cognitive did not have a significant indirect effect on satisfaction with life via social comparison in any of the three samples: Spanish (β = .002, [CI]: -.10, .22, p > .05), British (β = -.01, [CI]: -.15, .16, p > .05) and Turkish (β = .04, [CI]: .00, .25,

p > .05). However, the indirect effect of Anxiety perceptions factor 2 social on satisfaction with life by social comparison was significant in the three samples: Spanish (β = -.10, [CI]: -.47, -.01, *p* < .05), British (β = -.47, [CI]: -2.15, -.15, *p* < .05) and Turkish (β = -.17, [CI]: -.50, -.05, *p* < .05).

Well-being Perceptions, Social Comparison, and Satisfaction With Life

The standardized factor loadings and factor covariance of each causal model by country are shown in figures 2a, 2b and 2c. The variance explained on social comparison ranges from 13% to 29% and on SWL ranges from 17% to 24%. Moreover, factor loadings were >.40 across all three samples.
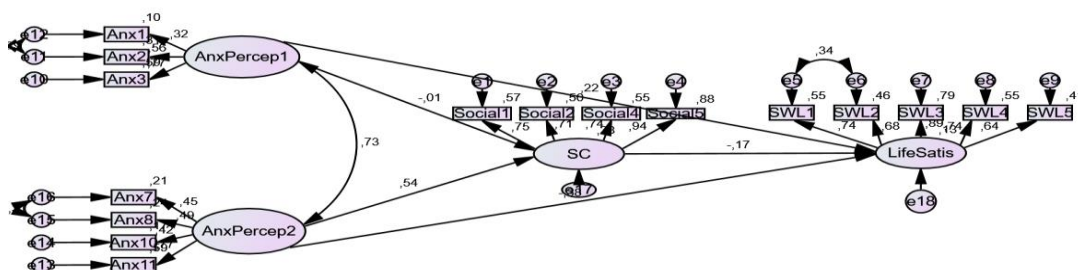

Figure 2a. Structural model Well-being Perceptions, Social Comparison, and Satisfaction With Life in the Spanish sample.
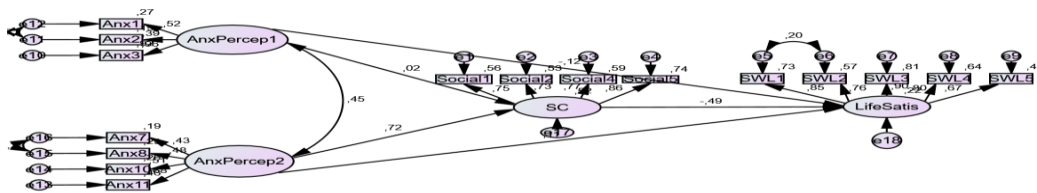
Figure 2b. Structural model Well-being Perceptions, Social Comparison, and Satisfaction With Life in the British sample.
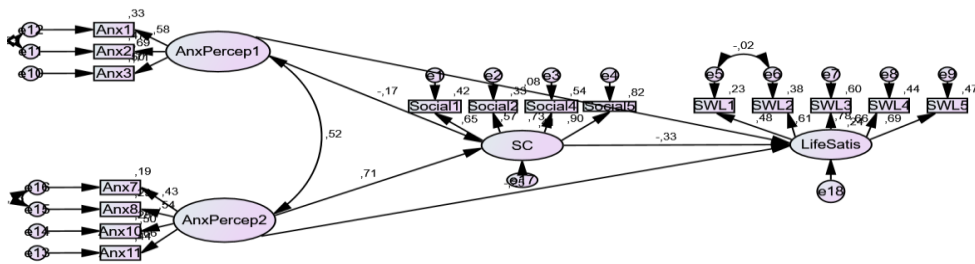

Figure 2c. Structural model Well-being Perceptions, Social Comparison, and Satisfaction With Life in the Turkish sample.

Structural Invariance

The full structural model was assessed using the same fit indices and cut-off scores as in the CFA models. First, the full model was tested with baseline values. Model 1 (M1) corresponds to the configural model, which indicated an acceptable fit to the data ($\chi^2 = 530.30$; df = 330, p = .00, *CFI* = .94; *TLI* = .93; *RMSEA* = .04 (90% CI, .03–.04). Model 2 (M2) (measurement weights) ($\chi2 = 571.77$; df = 356, p = .00, CFI = .94; TLI = .93; RMSEA = .04 (90% CI, .03–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data acceptably ($\chi^2 = 606.31$; df = 366, p = .00, *CFI* = .93; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). ΔCFI had a value of -.01 and therefore structural invariance was met. The researcher proceeded to constrain the structural covariances in model 4 (M4). M4 fits the data adequately ($\chi^2 = 633.62$; df = 372, p = .00, *CFI* = .92; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). When structural covariances were constrained M4 did not significantly differ from the M3 as ΔCFI had a value of -.01.

Table 2

Results of tests for invariance across countries

					Model fit		Model difference (ΔM)				
Model	χ^2	df	RMSEA (90% CI)	CFI		ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI	
M1	530.30[*]	330	.04 (.03-.04)	.94		–	–	–	–	–	
M2	571.77[*]	356	.04 (.03–.04)	.94		M2 vs. M1	41.47	26	.00	.00	
M3	606.31[*]	366	.04 (.03–.04)	.93		M3 vs. M2	34.54	10	.00	-.01	
M4	633.62[*]	372	.04 (.03–.04)	.92		M4 vs. M3	27.31	6	.00	-.01	

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. [*]p < 0.05.

Direct Paths

The direct paths with beta coefficients for the unconstrained model (M1) in each sample are shown in Figure 2a, 2b and 2c. Results indicated that factor 1 of well-being perceptions (well-being perceptions negative) did not have a direct effect on life satisfaction in any of the three countries: Spain ($\beta = .20$, $p > .05$), UK ($\beta = .24$, $p > .05$) and Turkey ($\beta = -.01$, $p > .05$). Nevertheless, factor 2 of well-being perceptions (well-being perceptions positive) had a direct effect on life satisfaction only in the Spanish sample ($\beta = .20$, $p < .05$). The direct effect of well-being perceptions' factor 2 on life satisfaction was not significant in

the other two samples: in the English sample ($\beta = .24$, $p > .05$) and Turkish sample ($\beta = -.01$, $p > .05$).

Moreover, the negative direct effect of social comparison on life satisfaction was significant in the three samples: Spanish ($\beta = -.26$, $p < .05$), English ($\beta = -.33$, $p < .05$) and Turkish ($\beta = -.47$, $p < .05$).

Indirect paths

The indirect effects of well-being perceptions on life satisfaction through social comparison were significant for both factors in each country; well-being perceptions negative: Spain ($\beta = .08$) [CI]: .02, .16, $p \leq .01$), UK ($\beta = .25$) [CI]: .09, .48, $p \leq .05$) and Turkey ($\beta = .15$) [CI]: .08, .27, $p \leq .01$); and well-being perceptions positive: Spain ($\beta = -.05$) [CI]: -.13, -.001, $p \leq .05$), UK ($\beta = -.10$) [CI]: -.25, -.02, $p \leq .05$) and Turkey ($\beta = -.20$) [CI]: -.31, -.14, $p \leq .05$).

Well-being Perceptions, Social Comparison, Loneliness

The standardized factor loadings and factor covariance of each causal model by country are shown in figures 3a, 3b and 3c. Factor loadings were $\geq .40$ across all three samples; except the factor loading on well-being item 9 to well-being factor 2 (.22), UCLA item 15 to loneliness (.30), item 8 of UCLA to loneliness (-.27), and item 4 UCLA to loneliness (-.13) in the Turkish sample; in the British sample item 4 of well-being to well-being factor 1 (.34); and in the Spanish sample well-being item 8 to well-being factor 2 (.31), well-being item 9 to factor 2 (.20) and UCLA item 17 to loneliness (.30).
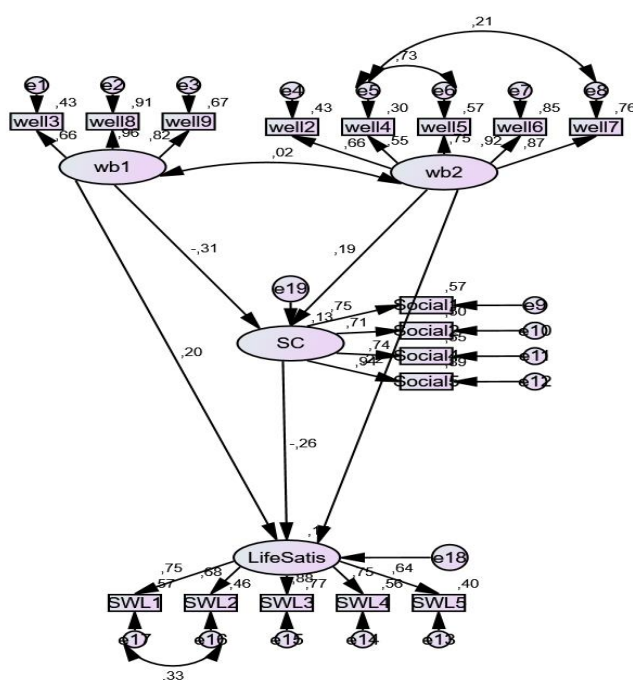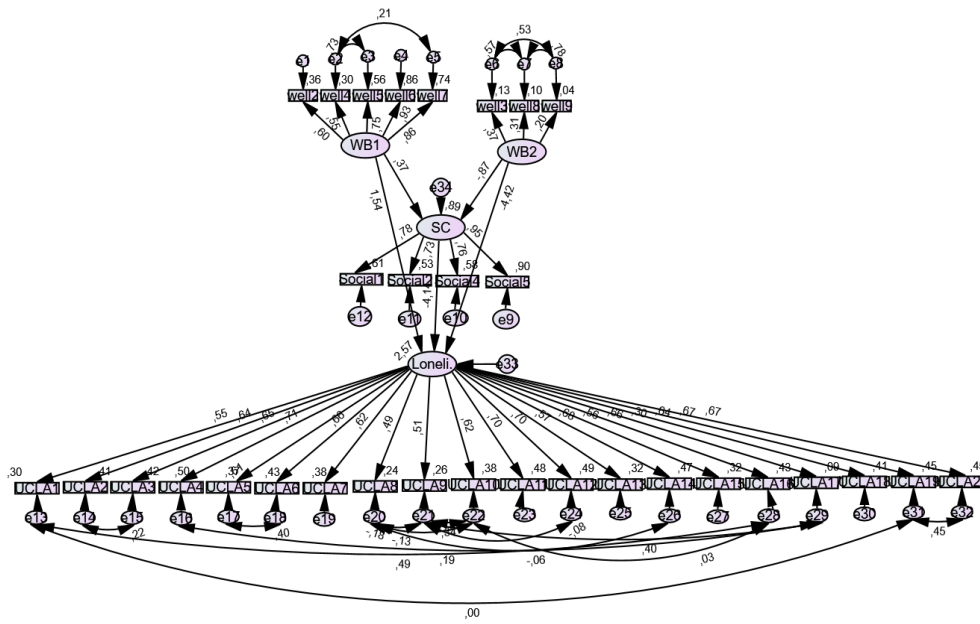
Figure 3a. Structural model Well-being Perceptions, Social Comparison, Loneliness in the Spanish sample.
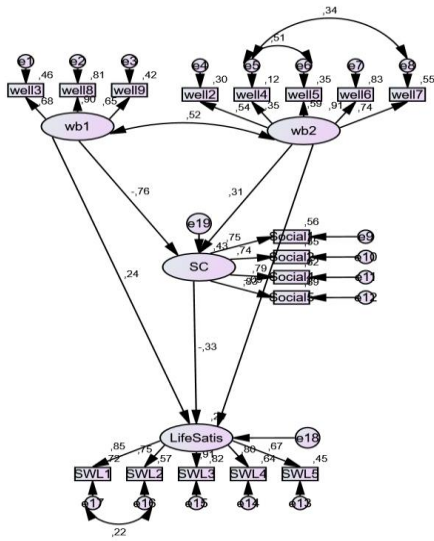

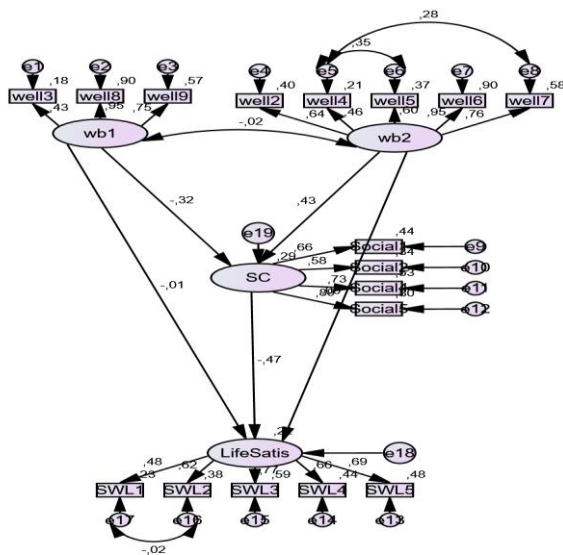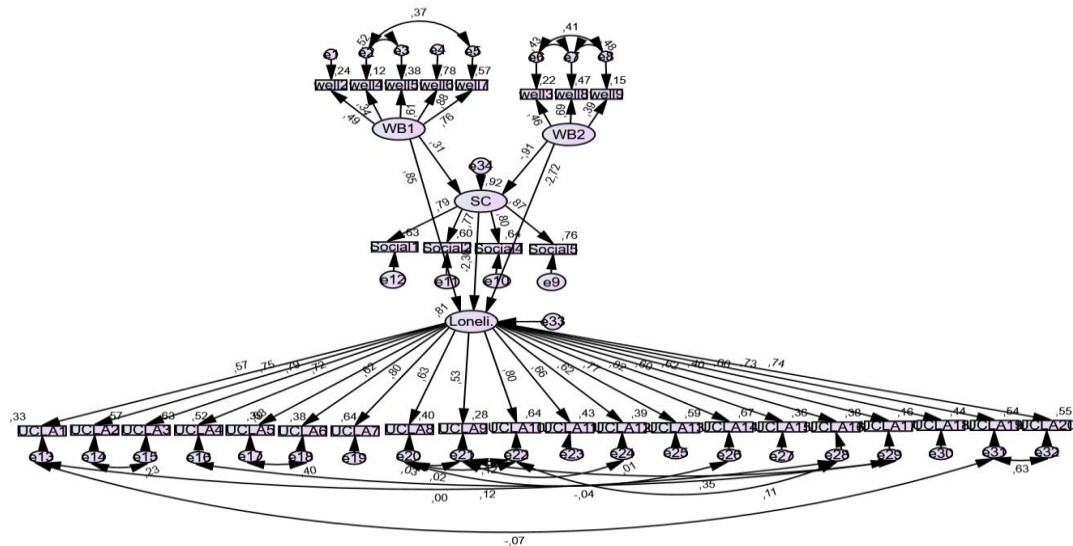Figure 3b. Structural model Well-being Perceptions, Social Comparison, Loneliness in the British sample.
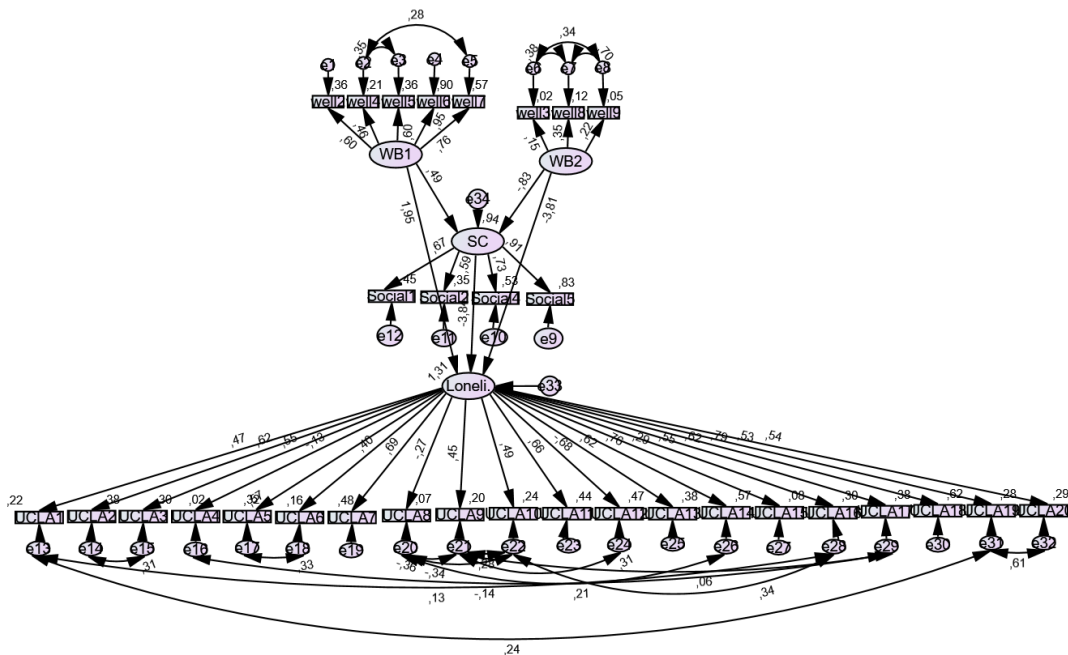
Figure 3c. Structural model Well-being Perceptions, Social Comparison, Loneliness in the Turkish sample.

Structural Invariance

The full model was tested with baseline values. The configural model (M1) indicated a poor fit to the data (χ^2 = 2314.68; df = 1329, p = .00, *CFI* = .86; *TLI* = .84; *RMSEA* = .04 (90% CI, .04-.04). Model 2 (M2) (measurement weights) ($\chi2$ = 2791,48; df = 1385, p = .00, CFI = .80; TLI = .80; RMSEA = .05 (90% CI, .04-.05). ΔCFI was not within recommended guidelines (ΔCFI = .06). Thus, factor loadings are not operating equivalently across the three groups. Although factor loadings were not invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data acceptably (χ^2 = 606.31; df = 366, p = .000, *CFI* = .93; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). ΔCFI had a value of .00 and therefore structural invariance was met. The

researcher proceeded to constrain the structural covariances in model 4 (M4). M4 fits the data poorly (χ^2 = 2814,32; df = 1395, p = .00, *CFI* = .80; *TLI* = .80; *RMSEA* = .05 (90% CI, .04–.05). When structural covariances were constrained M4 did not significantly differ from the M3 as ΔCFI had a value of .00.

Table 3

Results of tests for invariance across countries

	Model fit				Model difference (*ΔM)*				
Model	χ^2	Df	RMSEA (90% CI)	CFI	ΔM	*Δχ*2	Δdf	ΔRMSEA	ΔCFI
M1	2314.68*	1329	.04 (.04-.04)	.86	–	–	–	–	–
M2	2791.48*	1385	.05 (.04-.05)	.80	M2 vs. M1	476.8	56	.01	.06
M3	2799.03*	1391	.05 (.04-.05)	.80	M3 vs. M2	7.55	6	.00	.00
M4	2814.32*	1395	.05 (.04-.05)	.80	M4 vs. M3	15.29	4	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Direct Paths

The significant direct paths with beta coefficients for the unconstrained model (M1) in each sample are shown in Figure 3a, 3b and 3c. Results indicated that factor 1 of well-being

perceptions (well-being positive) had a negative direct effect on loneliness that was significant only in the Spanish sample: Spain (β = -.44, p < .05), UK (β = -.16, p > .05) and Turkey (β = -.08, p > .05). The direct effect of well-being perceptions' factor 2 (well-being negative) on loneliness was not significant in any of the three samples: Spanish sample (β = .17, p > .05), British sample (β = .12, p > .05) and Turkish sample (β = .14, p > .05).

Moreover, the positive direct effect of social comparison on loneliness was significant in the Spanish and British samples: Spanish (β = .36, p < .05), British (β = .36, p < .05). However, it was not significant in the Turkish sample (β = .13, p > .05).

Indirect Paths

The indirect effects of well-being perceptions on loneliness through social comparison were significant for both factors in each country: factor 1 well-being positive: Turkey (β = -2.60) [CI]: -2.60, -.89, , $p \leq$ .05), UK (β = -.72) [CI]: -1.08, -.21, $p \leq$ .05) and Spain (β = -1.54) [CI]: -2.26, -.97, $p \leq$ .05); and factor 2 well-being negative: Spain (β = 3.59) [CI]: 2.55, 5.18, $p \leq$ .05), UK (β = 2.09) [CI]: 1.11, 2.99, $p \leq$ .05) and Turkey (β = 3.20) [CI]: 2.19, 4.47, $p \leq$ .05).

Well-being Perceptions, Social Comparison, Positive and Negative Experience

The standardized factor loadings and factor covariance of each causal model by country are shown in figures 4a, 4b and 4c.
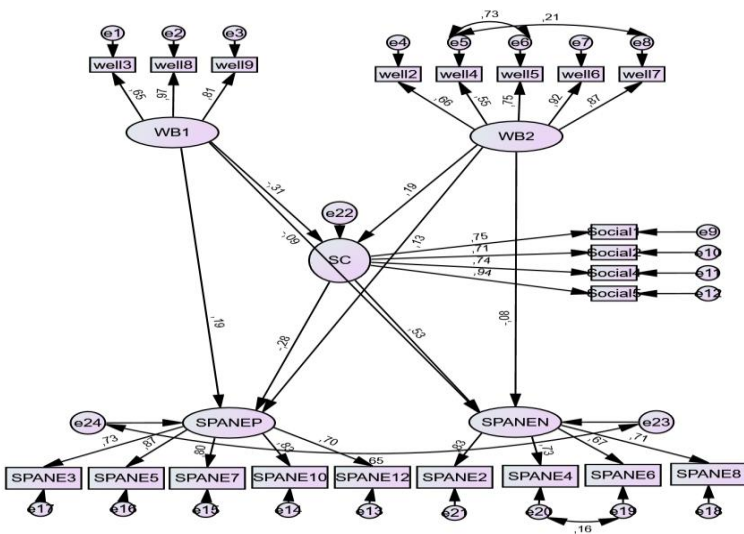
Figure 4a. Structural model Well-being Perceptions, Social Comparison, Positive and Negative Experience in the Spanish sample
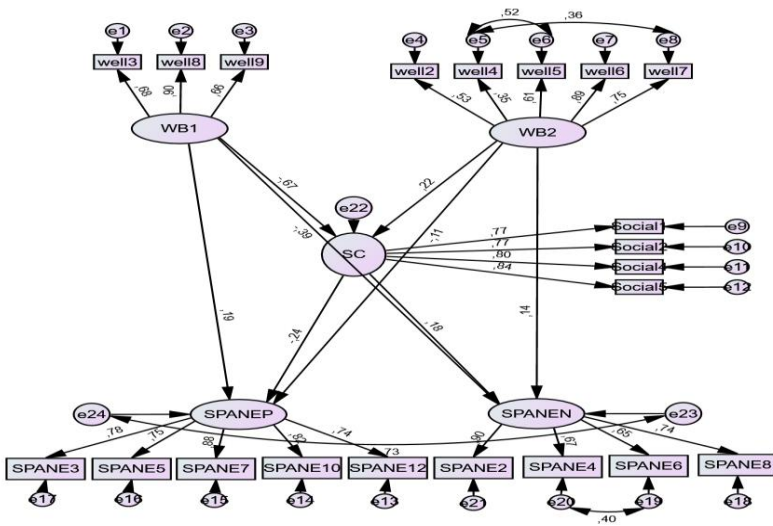
Figure 4b. Structural model Well-being Perceptions, Social Comparison, Positive and Negative Experience in the British sample

Figure 4c. Structural model Well-being Perceptions, Social Comparison, Positive and Negative Experience in the Turkish sample

Structural Invariance

Model 1 (M1) corresponds to the configural model, which indicated an acceptable fit to the data (χ^2 = 846.90; df = 531, p = .00, *CFI* = .94; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). Model 2 (M2) (measurement weights) ($\chi 2$ = 889.82; df = 563, p = .00, CFI = .93; TLI = .92; RMSEA = .04 (90% CI, .03–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data acceptably (χ^2 = 929.61; df = 579, p = .000, *CFI* = .93; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). ΔCFI had a value of .00 and therefore structural invariance was met. The researcher proceeded to constrain the structural covariances in model 4 (M4). M4 fits the data adequately (χ^2 = 937.16; df = 583, p = .00,

CFI = .93; *TLI* = .92; *RMSEA* = .04 (90% CI, .03–.04). When structural covariances were

constrained M4 did not significantly differ from the M3 as ΔCFI had a value of .00.

Table 4

Results of tests for invariance across countries

		Model fit				Model difference (*ΔM*)			
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	846.90[*]	531	.04 (.03-.04)	.94	–	–	–	–	–
M2	889.82*	563	.04 (.03-.04)	.93	M2 vs. M1	42.91	32	.00	-.01
M3	929.61*	579	.04 (.03-.04)	.93	M3 vs. M2	39.79	16	.00	.00
M4	937.16*	583	.04 (.03-.04)	.93	M4 vs. M3	7.55	4	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. [*]p < 0.05.

Direct Paths

The significant direct paths with beta coefficients for the unconstrained model (M1) in

each sample are shown in Figure 4a, 4b and 4c. Results indicated that factor 1 of well-being

perceptions (negative) did not have a significant direct effect on positive experience: (β = .18,

p > .05) and neither on negative experience (β = -.08, p > .05) in the Spanish sample.

Moreover, the direct effect of well-being perceptions factor 1 (negative) on positive (β = .14, p > .05) and negative experience (β = -.07, p > .05) was not significant for the Turkish sample. Nevertheless, in the British sample, factor 1 of well-being perceptions (well-being negative) only had a significant direct effect on negative experience (β = -.39, p ≤ .05) but did not have a significant effect on positive experience (β = .19, p > .05). The direct effect of well-being perceptions' factor 2 on positive and negative experience was not significant in any of the three samples: Spanish sample positive experience (β = .13, p > .05) and negative experience (β = -.07, p > .05); British sample positive experience (β = -.11, p > .05) and negative experience (β = .14, p > .05); and Turkish sample positive experience (β = -.13, p > .05), negative experience (β = .04, p > .05).

Moreover, the positive direct effect of social comparison on positive and negative experience was as expected: in the Spanish sample social comparison to positive experience (β = -.28, p < .05), to negative experience (β = .53, p < .05); British sample social comparison to positive experience (β = -.14, p < .05), to negative experience (β = .12, p < .05); Turkish sample social comparison to positive experience (β = -.23, p < .05), to negative experience (β = .11, p < .05).

Indirect Paths

The indirect effects of well-being perceptions on positive and negative experience through social comparison were not equivalent in the three samples. In the Spanish sample, indirect effects were significant for well-being perceptions factor 1 (negative) and positive (β = .09) [CI]: .03, .17, p < .05) and negative experience (β = -.16) [CI]: -.28, -.05, p < .05). However, in the Spanish sample the indirect effects of well-being perceptions factor 2 and positive and negative experience were not significant: respectively, (β = -.05) [CI]: -.150, .01, p > .05), (β = .10) [CI]: -.03, .24, p > .05). In the other two samples, results of indirect effects

were as follow: British sample well-being factor 1 to positive experience: (β = .16) [CI]: -.01,

.46, $p > .05$), and to negative experience (β = -.12) [CI]: -.31, .10, $p > .05$); factor 2 to

positive experience (β = -.05) [CI]: -.21, .01, $p > .05$), and to negative experience (β = .04)

[CI]: -.02, .22, $p > .05$). Turkish sample well-being factor 1 to positive experience was

significant (β = .06) [CI]: .00, .14, $p < .05$), but was not significant to negative experience (β =

-.03) [CI]: -.12, .03, $p > .05$); factor 2 to positive experience was not significant (β = -.08)

[CI]: -.17, .00, $p > .05$), and neither to negative experience (β = .05) [CI]: -.05, .13, $p > .05$).

Well-being Perceptions, Social Comparison, and Perceived Social Support

The standardized factor loadings and factor covariance of each causal model by

country are shown in figures 5a, 5b and 5c.
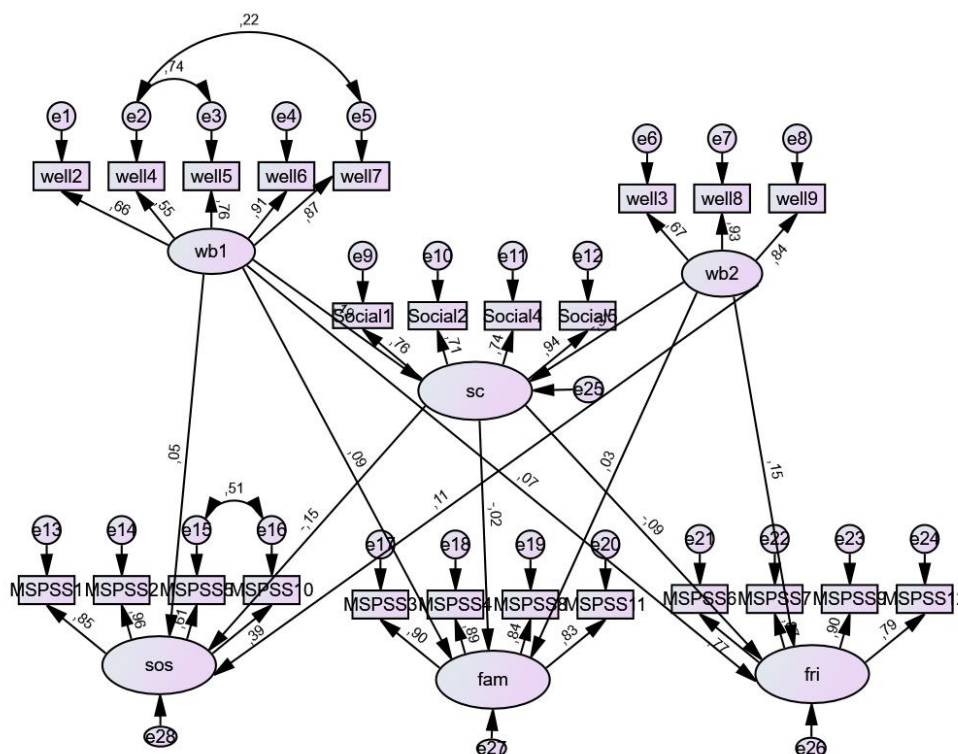
Figure 5a. Structural model Well-being Perceptions, Social Comparison, and Perceived Social Support in the
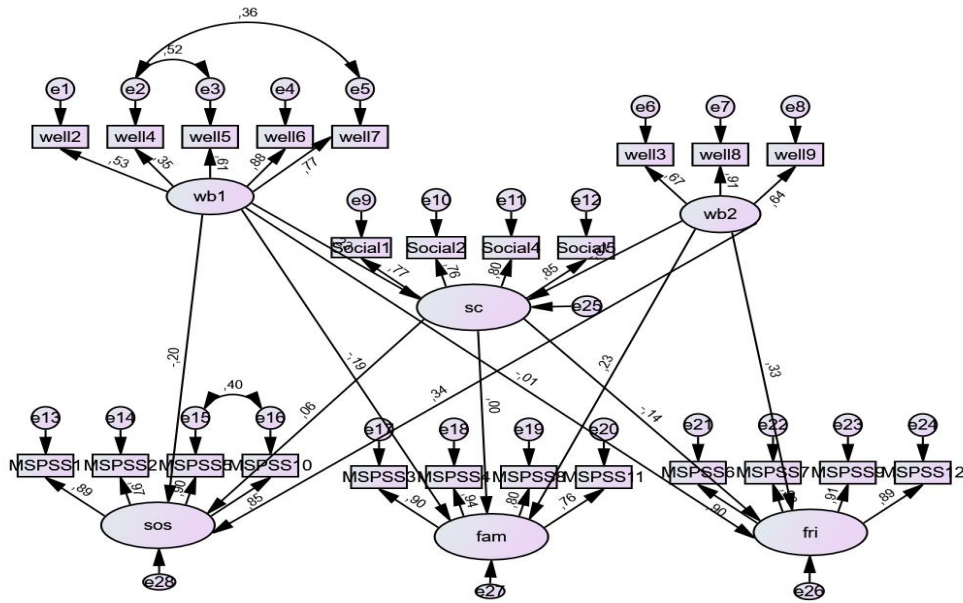
Spanish sample.

Figure 5b. Structural model Well-being Perceptions, Social Comparison, and Perceived Social Support in the Spanish sample.
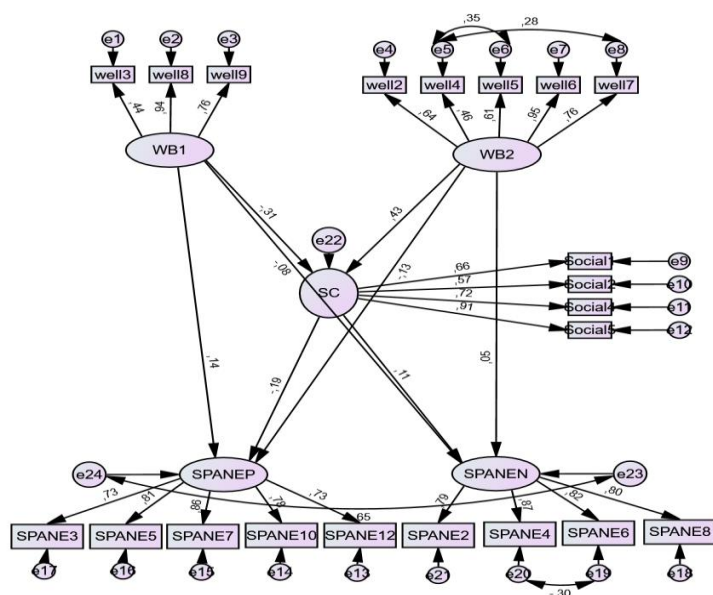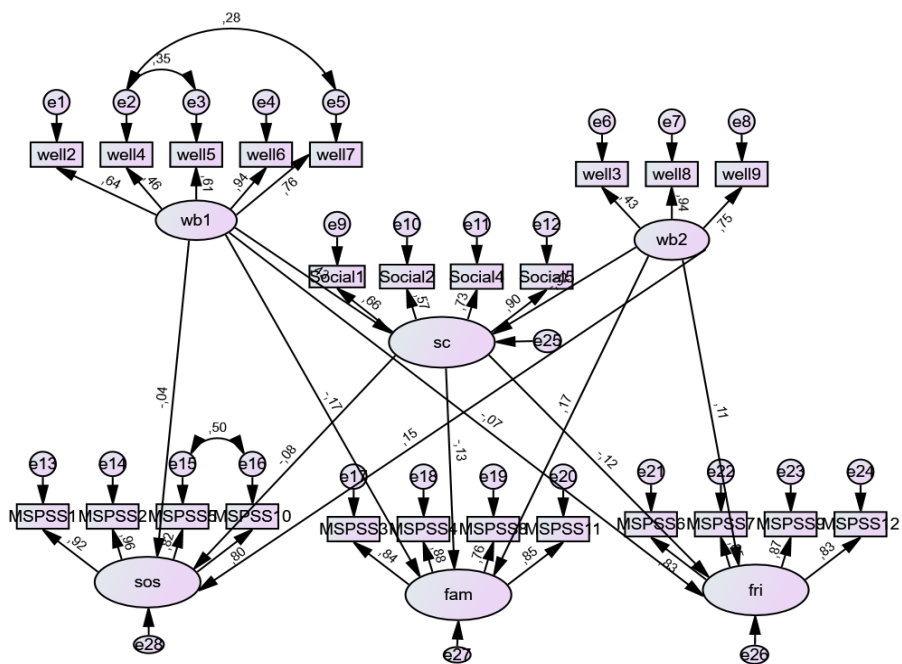

Figure 5c. Structural model Well-being Perceptions, Social Comparison, and Perceived Social Support in the Turkish sample.

Structural Invariance

Model 1 (M1) corresponds to the configural model, which indicated an acceptable fit to the data (χ^2 = 1255.33; df = 714, p = .00, *CFI* = .92; *TLI* = .90; *RMSEA* = .04 (90% CI, .04–.04). Model 2 (M2) (measurement weights) ($\chi2$ = 1299.52; df = 750, p = .00, CFI = .92; TLI = .90; RMSEA = .04 (90% CI, .04–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data poorly (χ^2 = 1749.54; df = 798, p = .00, *CFI* = .86; *TLI* = .84; *RMSEA* = .05 (90% CI, .05–.05). ΔCFI had a value of -.06 and therefore structural invariance was not met. Nevertheless, the researcher proceeded to constrain the structural covariances in model 4 (M4). M4 fits the data poorly (χ^2 = 1796.44; df = 820, p = .00, *CFI* = .86; *TLI* = .84; *RMSEA* = .05 (90% CI, .05–.05). When structural covariances were constrained M4 did not significantly differ from the M3 as ΔCFI had a value of .00.

Table 5

Results of tests for invariance across countries

	Model fit				Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	*Δχ*2	Δdf	ΔRMSEA	ΔCFI
M1	1255.33*	714	.04 (.04-.04)	.92	–	–	–	–	–
M2	1299.52*	750	.04 (.04-.04)	.92	M2 vs. M1	44.19	36	.00	.00
M3	1749.54*	798	.05 (.05-.05)	.86	M3 vs. M2	450.02	48	.01	-.06
M4	1796.44*	820	.05 (.05-.05)	.86	M4 vs. M3	-46.9	22	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Direct Paths

The direct effects of well-being perceptions factor 1 (positive) to perceived social support from friends ($\beta = .07$, $p > .05$), significant others ($\beta = .05$, $p > .05$) and family ($\beta = .09$, $p > .05$) were not significant in the Spanish sample. Also, there were no significant direct effects from factor 2 (negative) in this sample for friends ($\beta = .15$, $p > .05$), significant others ($\beta = .11$, $p > .05$) and family ($\beta = .03$, $p > .05$). Moreover, the direct effect of social comparison to perceived social support from friends ($\beta = -.09$, $p > .05$), significant others ($\beta =$

-.15, $p > .05$) and family ($\beta = -.02$, $p > .05$) were not significant. In the British sample the direct effects of well-being perceptions factor 1 (positive) to perceived social support from friends ($\beta = -.01$, $p > .05$), significant others ($\beta = -.20$, $p > .05$) and family ($\beta = -.19$, $p > .05$) were not significant. Furthermore, the direct effect from factor 2 (negative) to perceived social support from friends was significant ($\beta = .33$, $p < .05$), and from significant others ($\beta = .34$, $p < .05$), but was not significant the effect to perceived social support from family ($\beta = .23$, $p > .05$). Moreover, in the British sample the direct effect of social comparison to perceived social support from friends ($\beta = -.14$, $p > .05$), significant others ($\beta = .06$, $p > .05$) and family ($\beta = -.00$ $p > .05$) were not significant. In the Turkish sample, the direct effects of well-being perceptions factor 1 (positive) to perceived social support from friends ($\beta = -.07$, $p > .05$), and significant others ($\beta = -.04$, $p > .05$) were not significant, but it was significant the direct effect to perceived social support from family ($\beta = -.17$, $p < .05$). Also, were not significant the direct effects from factor 2 in this sample to friends ($\beta = .11$, $p > .05$) and significant others ($\beta = .15$, $p > .05$), but was significant the direct effect to perceived social support from family ($\beta = .17$, $p < .05$). Moreover, the direct effect of social comparison to perceived social support from friends ($\beta = -.12$, $p > .05$), significant others ($\beta = -.08$, $p > .05$) and family ($\beta = -.13$, $p > .05$) were not significant.

Indirect Paths

The indirect effects, via social comparison, as observed from the bootstrapping confidence intervals were not significant in any of the variables of interest. In the Spanish sample: well-being factor 1 to friends' social support ($\beta = -.02$, [CI]: -.15, .01, $p > .05$); well-being factor 2 to friends' social support ($\beta = -.04$, [CI]: -.04, .18, $p > .05$); well-being factor 1 to family social support ($\beta = -.00$, [CI]: -.07, .05, $p > .05$); well-being factor 2 to family social support ($\beta = .01$, [CI]: -.08, .08, $p > .05$); well-being factor 1 to someone special's social

support (β = -.03, [CI]: -.13, .01, p > .05); well-being factor 2 to someone special's social

support (β = .04, [CI]: -.02, .21, p > .05).

In the British sample: well-being factor 1 to friends' social support (β = -.03, [CI]: -4.38,

.1.87, p > .05); well-being factor 2 to friends' social support (β = .09, [CI]: -10.16, 4.02, p >

.05); well-being factor 1 to family social support (β = -.00, [CI]: -1.04, 1.73, p > .05); well-

being factor 2 to family social support (β = .00, [CI]: -5.75, .53, p > .05); well-being factor 1

to someone special's social support (β = .01, [CI]: -1.35, 2.05, p > .05); well-being factor 2 to

someone special's social support (β = -.04, [CI]: -4.07, 5.73, p > .05).

In the Turkish dataset there was incomplete data, concretely in the item MSPSS2 of two

cases, a regression imputation was conducted to obtain bootstrapping confidence intervals.

The indirect effects in this sample, via social comparison, as observed from the bootstrapping

confidence intervals were not significant in any of the variables of interest: indirect effect of

well-being factor 1 to friends' social support (β = -.05, [CI]: -.13, .01, p > .05); well-being

factor 2 to friends' social support (β = .04, [CI]: -.01, .10, p > .05); well-being factor 1 to

family social support (β = -.05, [CI]: -.13, .00, p > .05); well-being factor 2 to family social

support (β = .04, [CI]: -.00, .11, p > .05); well-being factor 1 to someone special's social

support (β = -.04, [CI]: -.11, .04, p > .05); well-being factor 2 to someone special's social

support (β = -.03, [CI]: -.03, .08, p > .05).

Social Network Types, Social Comparison, Anxiety Perceptions

The results of the structural invariance testing for the relationships between social

network types and applications, social comparison, and anxiety perceptions, are shown

below. Models for each country are presented in figures 6a, 6b, and 6c.

Figure 6a. Structural model Social Network Types, Social Comparison, Anxiety Perceptions in the Spanish sample.

Figure 6b. Structural model Social Network Types, Social Comparison, Anxiety Perceptions in the British sample.

Figure 6c. Structural model Social Network Types, Social Comparison, Anxiety Perceptions in the Turkish sample.

Structural Invariance

Model 1 (M1) corresponds to the unconstrained model, which indicated a poor fit to the data ($\chi^2 = 386.68$; df = 201, p = .000, *CFI* = .88; *TLI* = .84; *RMSEA* = .04 (90% CI, .04–.05). Model 2 (M2) (measurement weights) ($\chi2 = 402.50$; df = 217, p = .000, CFI = .88; TLI = .85; RMSEA = .04 (90% CI, .05–.05). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data inadequately ($\chi^2 = 461.72$; df = 239,

p = .000, *CFI* = .86; *TLI* = .84; *RMSEA* = .05 (90% CI, .04–.045). ΔCFI had a value of -.02

and therefore structural invariance was not met. The researcher proceeded to constrain the

structural covariances in model 4 (M4). M4 fits the data poorly (χ^2 = 584.16; df = 247,

p = .000, *CFI* = .79; *TLI* = .76; *RMSEA* = .05 (90% CI, .05–.06). When structural covariances

were constrained M4 significantly differed from the M3 as ΔCFI had a value of -.07.

Direct Paths

Results indicated that the direct effects of SNS types frequency of usage on social

comparison are different in the different cultures' samples. Therefore, in the Spanish sample

SNS types did not have a significant direct effect on social comparison: Facebook (β = -.12, *p*

> .05), Instagram (β = .035, *p* > .05), WhatsApp (β = .19, *p* > .05); in the British sample only

Instagram showed a significant direct effect on social comparison (β = .45, *p* ≤ .001), but the

effects of Facebook and WhatsApp were not significant, respectively (β = -.01, *p* > .05), (β =

-.15, *p* > .05); in the Turkish sample also Instagram was significant (β = .21, *p* < .05), but not

Facebook (β = .09, *p* > .05), and neither WhatsApp (β = -.09, *p* > .05).

In the Spanish sample, only Facebook had a significant direct effect on anxiety factor

2 (β = .41, *p* < .05), while in the British sample only WhatsApp had a significant direct effect

on anxiety factor 1 (β = .21, *p* > .05), and the Turkish sample did not show any significant

effect from the SNS types to anxiety perceptions in any of the two factors. Spanish sample

results of the direct effect from Facebook to anxiety perceptions factor 1 (β = .01, *p* > .05),

from WhatsApp to anxiety perceptions factor 1 (β = -.12, *p* > .05), to anxiety perceptions

factor 2 (β = -.17, *p* > .05), and from Instagram to factor 1 (β = .01, *p* > .05), and to factor 2

(β = -.06, *p* > .05).

British sample results of the direct effect from Facebook to anxiety perceptions factor

1 (β = -.13, *p* > .05), factor 2 (β = .20, *p* > .05); from WhatsApp to anxiety perceptions factor

2 (β = .20, p > .05); and from Instagram to factor 1 (β = -.14, p > .05), and to factor 2 (β = -.18, p > .05).

Turkish sample results of the direct effect from Facebook to anxiety perceptions factor 1 (β = -.20, p > .05), factor 2 (β = -.23, p > .05); from WhatsApp to anxiety perceptions factor 1 (β = -.16, p > .05), factor 2 (β = -.12, p > .05); and from Instagram to factor 1 (β = -.05, p > .05), and to factor 2 (β = .03, p > .05).

Indirect Paths

Indirect effects from the SNS types to anxiety perceptions via social comparison were not significant in the Spanish sample. Indirect effects of Instagram to anxiety perceptions factor 1 (cognitive) (β = .02, [CI]: -.02, .05, p > .05), and to anxiety perceptions factor 2 (social) (β = .01, [CI]: -.02, .05, p > .05). WhatsApp to anxiety perceptions factor 1 (β = .09, [CI]: -.01, .16, p > .05) and factor 2 (β = .08, [CI]: -.01, .20, p > .05). Facebook to anxiety perceptions factor 1 (cognitive) (β = -.05, [CI]: -.08, .00, p > .05), factor 2 (social) (β = -.04, [CI]: -.08, .01, p > .05).

In the British sample, results showed that the indirect effects of Instagram to anxiety perceptions factor 1 (cognitive) was significant (β = .22, [CI]: .06, .49, p < .05), and to anxiety perceptions factor 2(social) (β = .35, [CI]: .04, .22, p < .05). WhatsApp to anxiety perceptions factor 1 (cognitive) was significant (β = -.07, [CI]: -.11, -.00, p < .05), but it was not significant to factor 2 (social) (β = -.12, [CI]: -.11, .00, p > .05). Facebook to anxiety perceptions factor 1 was not significant (β = -.00, [CI]: -.06, .06, p > .05), factor 2 (β = -.01, [CI]: --.08, .05, p > .05).

Finally the indirect effects of the different types of SNS to anxiety perceptions through social comparison in the Turkish sample were as follow: Instagram to factor 1 (anxiety perceptions cognitive) (β = .05, [CI]: .00, .05, p < .05), factor 2 (anxiety perceptions

social) ($\beta = .13$, [CI]: .01, .11, $p < .05$); Facebook to factor 1 ($\beta = .02$, [CI]: -.00, .05, $p > .05$), and to factor 2 ($\beta = .05$, [CI]: -.03, .07, $p > .05$); WhatsApp to factor 1 ($\beta = -.02$, [CI]: -.08, .01, $p > .05$), and to factor 2 ($\beta = -.05$, [CI]: -.14, .06, $p > .05$).

Table 6

Results of tests for invariance across countries

	Model fit				Model difference (ΔM)				
Model	$\chi2$	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi2$	Δdf	ΔRMSEA	ΔCFI
M1	386.68*	201	.04 (.04-.05)	.88	–	–	–	–	–
M2	402.50*	217	.04 (.04-.05)	.88	M2 vs. M1	15.82	16	.00	.00
M3	461.72*	239	.05 (.04-.05)	.86	M3 vs. M2	59.22	22	.01	-.02
M4	584.16**	247	.05 (.05-.06)	.79	M4 vs. M3	122.44	8	.00	-.07

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Social Network Types, Social Comparison, Well-being Perceptions

The results of the structural invariance testing for the relationships between social network types and applications, social comparison, and well-being perceptions, are shown below. Models for each country are presented in figures 7a, 7b, and 7c.
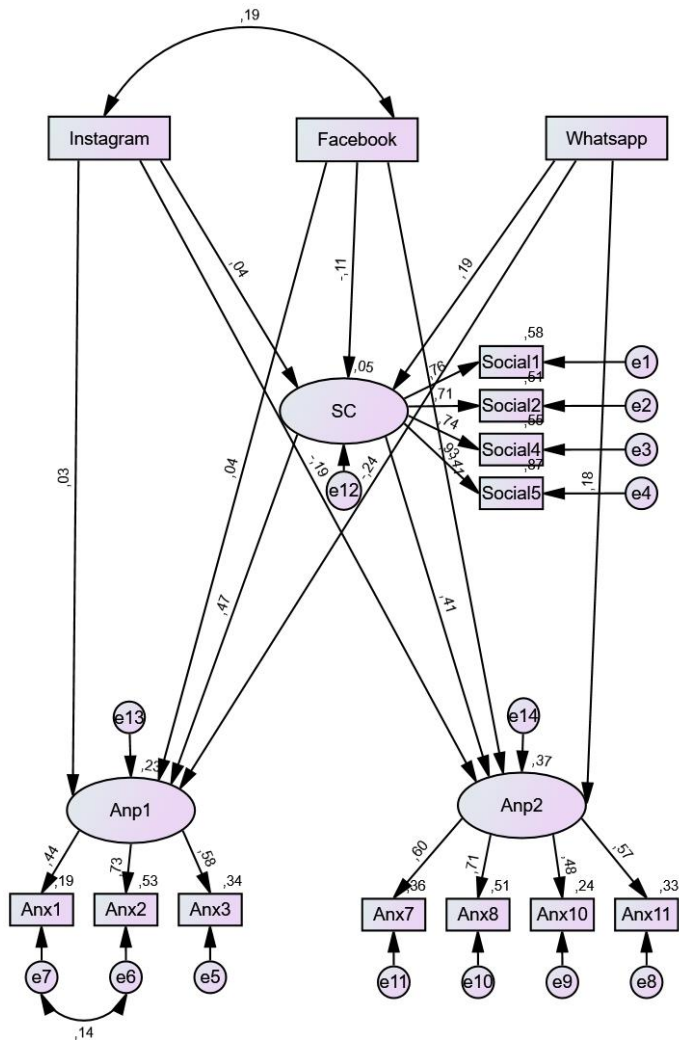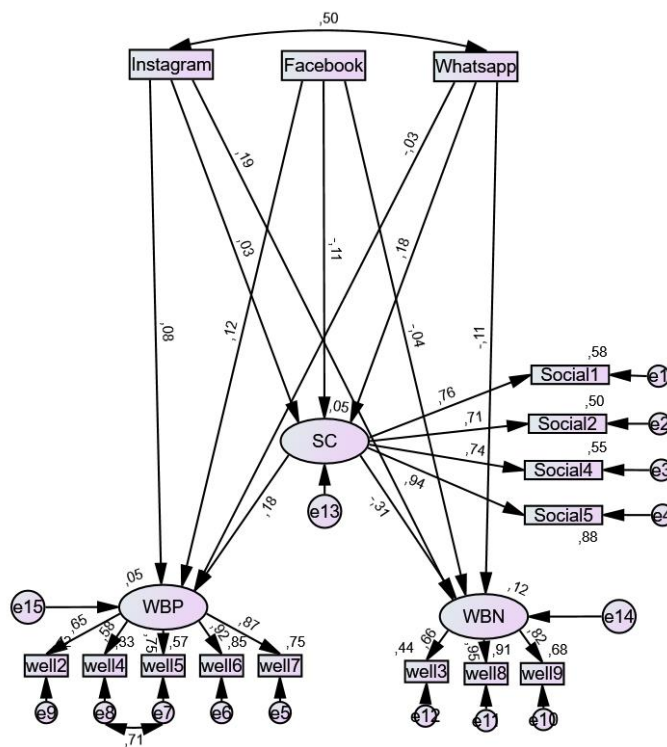

Figure 7a. Structural model Social Network Types, Social Comparison, Well-being Perceptions in the Spanish sample.
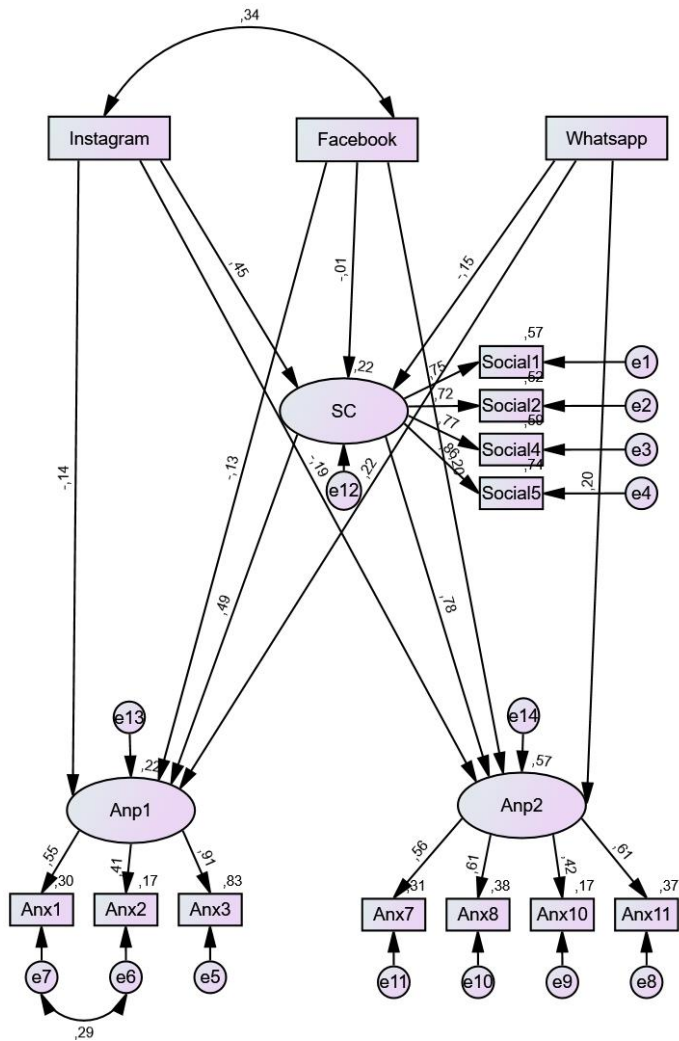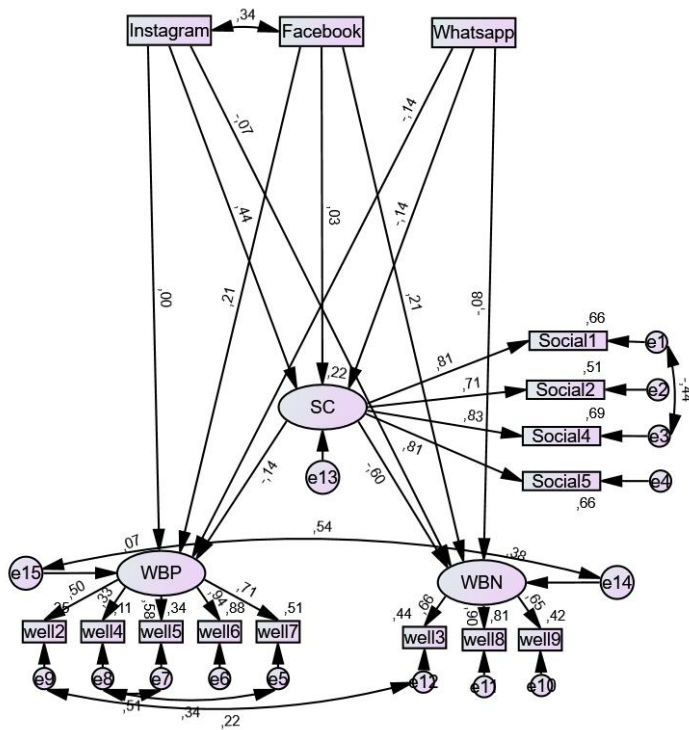
Figure 7b. Structural model Social Network Types, Social Comparison, Well-being Perceptions in the British sample.
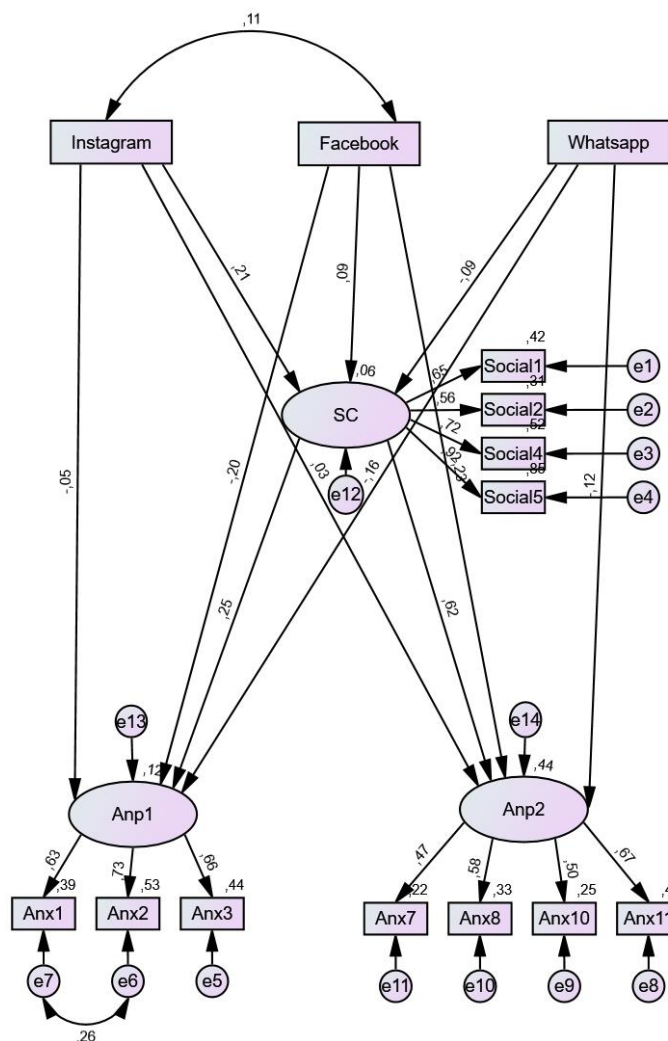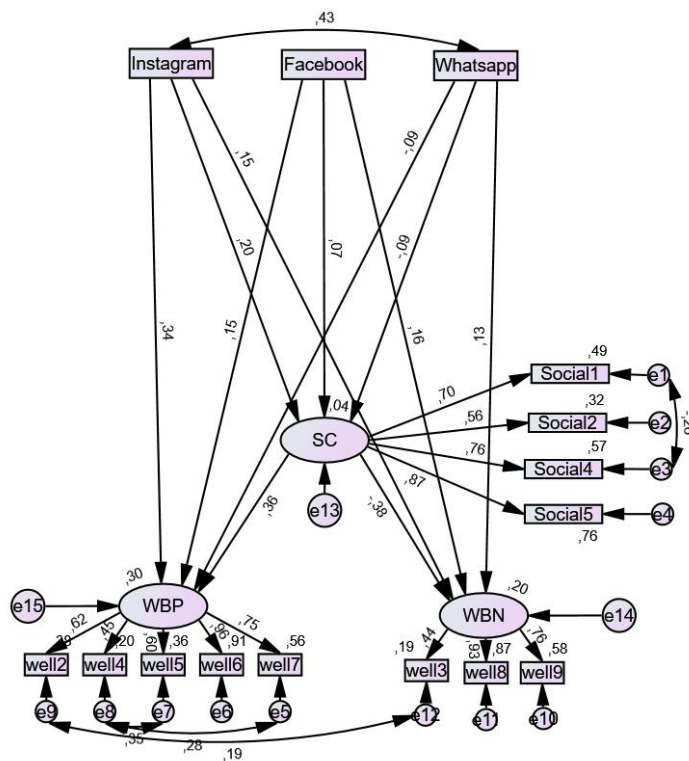
Figure 7c. Structural model Social Network Types, Social Comparison, Well-being Perceptions in the Turkish sample.

Structural Invariance

Model 1 indicated an adequate fit to the data (χ^2 = 422.57; df = 231, p = .000, *CFI* = .93; *TLI* = .90; *RMSEA* = .04 (90% CI, .04–.05). Model 2 (measurement weights) (χ^2 = 446.18; df = 249, p = .000, CFI = .93; TLI = .91; RMSEA = .04 (90% CI, .04-.05). ΔCFI was .00. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model 3 fitted the data inadequately (χ^2 = 526.440; df = 271, p = .000, *CFI* = .90; *TLI* = .89; *RMSEA* = .05 (90% CI, .04–.05). ΔCFI had a value of -

.03 and therefore structural invariance was not met. The researcher proceeded to constrain the structural covariances in model 4. Model 4 fits the data poorly (χ^2 = 689.75; df = 279, p = .000, *CFI* = .85; *TLI* = .83; *RMSEA* = .06 (90% CI, .05–.06). When structural covariances were constrained M4 significantly differed from the M3 as ΔCFI had a value of -.05.

Direct Paths

The direct effects of SNS types on well-being perceptions negative (WBn) and well-being perceptions positive (WBp) were not significant in the Spanish sample: Instagram to WBn (β = .19, *p* > .05), WBp (β = .08, *p* > .05); Facebook to WBn (β = -.04, *p* > .05), WBp (β = .12, *p* > .05); WhatsApp to WBn (β = -.11, *p* > .05), WBp (β = -.03, *p* > .05). Moreover, in the British sample only the direct effects of Facebook to WBn (β = .21, *p* < .05) and to WBp (β = .21, *p* < .05) were significant. While results were not significant from WhatsApp to WBn (β = -.08, *p* > .05), and to WBp (β = -.14, *p* > .05); and Instagram to WBn (β > .05), and to WBp (β = -.00, *p* > .05). These results in the British sample were consistent with the results found in the Turkish sample: Facebook to WBn (β = .16, *p* < .05) and to WBp (β = .15, *p* < .05); WhatsApp to WBn (β = .13, *p* > .05), and to WBp (β = -.09, *p* > .05); Instagram to WBn (β = .15, *p* > .05), and to WBp (β = .34, *p* > .05).

Indirect Paths

Indirect effects from the SNS types to well-being perceptions via social comparison were not significant in the Spanish sample. Indirect effects of Instagram to WBn (β = -.01, [CI]: -.11, .07, *p* > .05), and to WBp (β = .01, [CI]: -.04, .08, *p* > .05). WhatsApp to WBp (β = .03, [CI]: -.01, .11, *p* > .05) and WBn (β = -.06, [CI]: -.16, .00, *p* > .05). Facebook to WBp (β = -.02, [CI]: -.09, .02, *p* > .05), WBn (β = .03, [CI]: -.04, .10, *p* > .05).

In the British sample, results showed that the indirect effects of Instagram to well-being perceptions were significant for WBn (β = -.26, [CI]: -.41, -.11, *p* < .05) and WBp (β = -.06,

[CI]: -.21, .07, $p < .05$). However, the indirect effects of Facebook to WBn ($\beta = -.02$, [CI]: -.15, .11, $p > .05$), and WBp ($\beta = -.00$, [CI]: -.00, .02, $p > .05$); WhatsApp to WBn ($\beta = .08$, [CI]: -.01, .19, $p > .05$), and to WBp ($\beta = .02$, [CI]: -.01, .13, $p > .05$) were not significant.

These results followed the same pattern in the Turkish sample: Instagram to WBp ($\beta = .03$, [CI]: .01, .15, $p < .05$), to WBn ($\beta = -.01$, [CI]: -.14, -.02, $p < .05$); Facebook to WBn ($\beta = .03$, [CI]: -.09, .01, $p > .05$), WBp ($\beta = -.02$, [CI]: -.01, .08, $p > .05$); WhatsApp to WBn ($\beta = -.06$, [CI]: -.02, .13, $p > .05$), and to WBp ($\beta = .03$, [CI]: -.13, .02, $p > .05$).

Table 7

Results of tests for invariance across countries

			Model fit			Model difference (*ΔM*)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi2$	Δdf	ΔRMSEA	ΔCFI
M1	422.57*	231	.04 (.03-.05)	.93	–	–	–	–	–
M2	446.18**	249	.04 (.03-.05)	.93	M2 vs. M1	23.61	18	.00	.00
M3	526.44*	271	.04 (.04-.05)	.90	M3 vs. M2	80.26	22	.00	-.03
M4	689.74**	279	.06 (.05-.06)	.85	M4 vs. M3	163.3	8	.02	-.05

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Technology Activities, Social Comparison, Anxiety Perceptions

The results of the structural invariance testing for the relationships between technology activities, social comparison, and anxiety perceptions, are shown below. Models for each country are presented in figures 8a, 8b, and 8c.
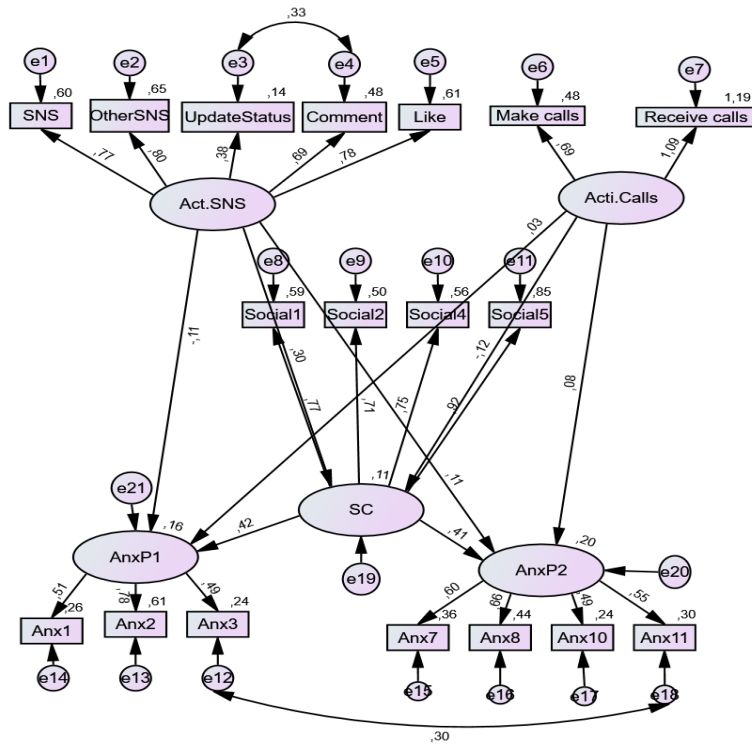
Figure 8a. Structural model Technology Activities, Social Comparison, Anxiety Perceptions in the Spanish sample.
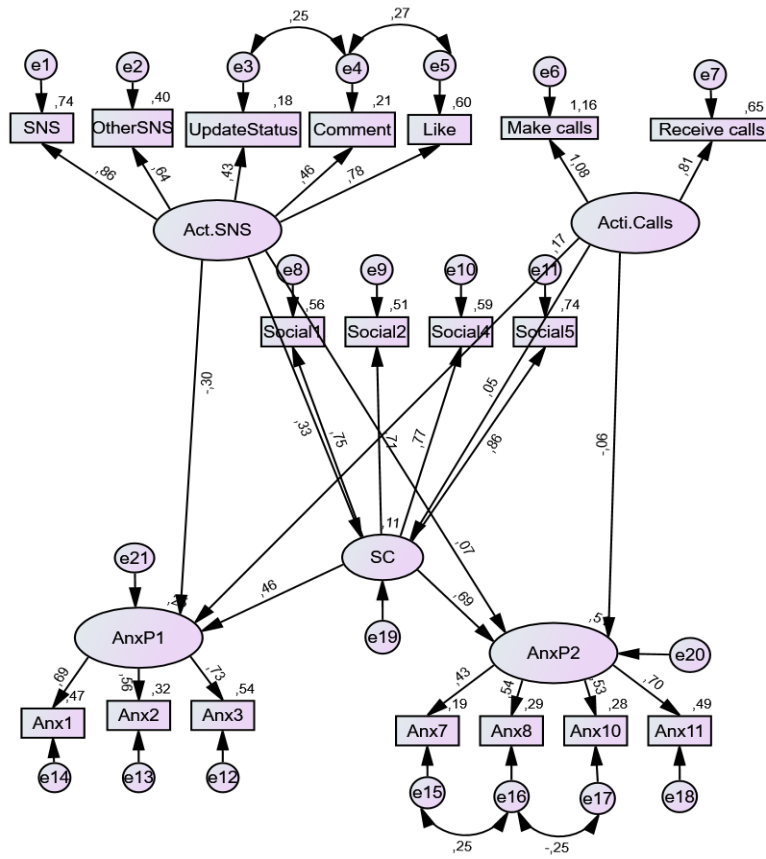
Figure 8b. Structural model Technology Activities, Social Comparison, Anxiety Perceptions in the British sample.
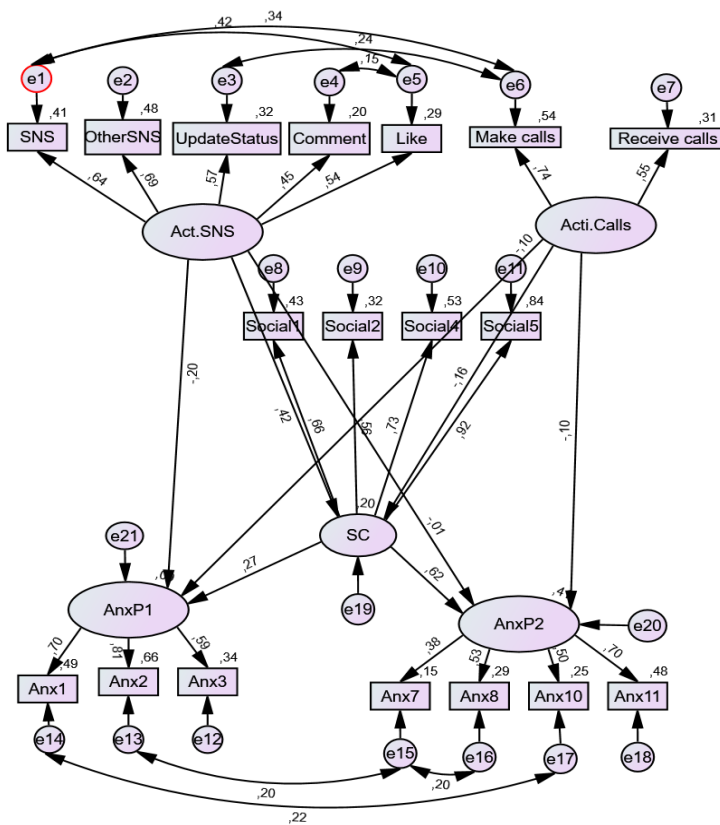
Figure 8c. Structural model Technology Activities, Social Comparison, Anxiety Perceptions in the Turkish sample.

Structural Invariance

Model 1 (M1) indicated a mediocre fit to the data ($\chi^2 = 659.50$; df = 381, p = .000, *CFI* = .89; *TLI* = .87; *RMSEA* = .04 (90% CI, .03–.04). Model 2 (M2) ($\chi2 = 691.50$; df = 407, p = .000, CFI = .89; TLI = .87; RMSEA = .04 (90% CI, .03–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model (M3) fitted the data poorly ($\chi^2 = 707.13$; df = 423, p = .000, *CFI* = .89; *TLI* = .88; *RMSEA* = .04 (90% CI, .03–.04). ΔCFI had a value of .00 and therefore structural invariance was met. The researcher proceeded to

constrain the structural covariances in model 4 (M4). Again, M4 fits the data mediocrely

(χ^2 = 711.66; df = 427, p = .000, *CFI* = .89; *TLI* = .88; *RMSEA* = .04 (90% CI, .03–.04).

When structural covariances were constrained M4 did not significantly differed from the M3

as ΔCFI had a value of .00. Structural invariance was met in each of the four levels.

Direct Paths

The direct effects of technology activities on social comparison were positive and

significant in the activities related to SNS (Act.SNS) in the three samples: Spanish sample (β

= .30, *p* < .05), British (β = .34, *p* < .05), and Turkish (β = .42, *p* < .05). However, the

activities related to calls (Acti.Calls) (make calls and receive calls) did not have significant

direct effects on social comparison: Spanish sample (β = -.12, *p* > .05), British (β = .05, *p* >

.05), and Turkish (β = -.16, *p* > .05).

Furthermore, in the Spanish sample Act.SNS direct effects on anxiety perceptions

factor 1 (anxiety perceptions cognitive) (β = -.04, *p* > .05), and factor 2 (β = -.04, *p* > .05)

were not significant. Acti.Calls direct effects on anxiety perceptions factor 1(anxiety

perceptions cognitive) (β = .03, *p* > .05) and factor 2 (anxiety perceptions social) (β = .08, *p* >

.05) were not significant. In the British sample Act.SNS direct effect on anxiety perceptions

factor 1 was negative and statistically significant (β = -.30, *p* < .05). Act.SNS did not have a

significant direct effect on anxiety perceptions factor 2 (β = .07, *p* > .05). Moreover, the

direct effects of Acti.Calls were not significant on anxiety perceptions factor 1 (β = .17, *p* >

.05) and neither on anxiety perceptions factor 2 (β = -.06, *p* > .05). In the Turkish sample, the

direct effect of Act.SNS on anxiety perceptions factor 1 was also negative and statistically

significant (β = -.23, *p* ≤ .05). However, the Act.SNS did not have a significant direct effect

on anxiety perceptions factor 2 (β = -.01, *p* > .05). Moreover, the direct effects of Acti.Calls

were not significant on anxiety perceptions factor 1 ($\beta = -.10$, $p > .05$) and neither on anxiety

perceptions factor 2 ($\beta = -.10$, $p > .05$)

Indirect Paths

Indirect effects from Act.SNS to anxiety perceptions factor 1 and factor 2, via social

comparison were significant: Spanish sample factor 1 ($\beta = .13$, [CI]: .00, .15, $p < .05$), factor

2 ($\beta = .12$, [CI]: .01, .23, $p < .05$); British sample factor 1 ($\beta = .15$, [CI]: -.04, .40, $p < .05$),

factor 2 ($\beta = .23$, [CI]: .09, .45, $p < .05$) ; Turkish sample factor 1 ($\beta = .11$, [CI]: .02, .15, $p <$

.05), and factor 2 ($\beta = .26$, [CI]: .10, .32, $p < .05$). Act.Calls indirect effects to anxiety

perceptions factor 1 and factor 2, via social comparison were not significant: Spanish sample

factor 1 ($\beta = -.05$, [CI]: -.10, .00, $p > .05$), factor 2 ($\beta = -.05$, [CI]: -.21, .00, $p > .05$); British

sample factor 1 ($\beta = .02$, [CI]: -.13, .12, $p > .05$), factor 2 ($\beta = .03$, [CI]: -.15, .18, $p > .05$) ;

Turkish sample factor 1 ($\beta = -.04$, [CI]: -.09, .01, $p > .05$), and factor 2 ($\beta = -.10$, [CI]: -.19,

.02, $p > .05$).

Table 8

Results of tests for invariance across countries

Model		Model fit			Model difference (*ΔM*)				
Model	χ2	df	RMSEA (90% CI)	CFI	ΔM	*Δ*χ2	Δdf	ΔRMSEA	ΔCFI
M1	659.51*	381	.04 (.03-.04)	.89	–	–	–	–	–
M2	691.50*	407	.04 (.03–.04)	.89	M2 vs. M1	31.99	26	.00	.00
M3	707.13*	423	.04 (.03–.04)	.89	M3 vs. M2	15.63	16	.00	.00
M4	711.66*	427	.04 (.03–.04)	.89	M4 vs. M3	4.53	4	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Technology Activities, Social Comparison, Well-being Perceptions

The results of the structural invariance testing for the relationships between technology activities, social comparison, and well-being perceptions, are shown below. Models for each country are presented in figures 9a, 9b, and 9c.
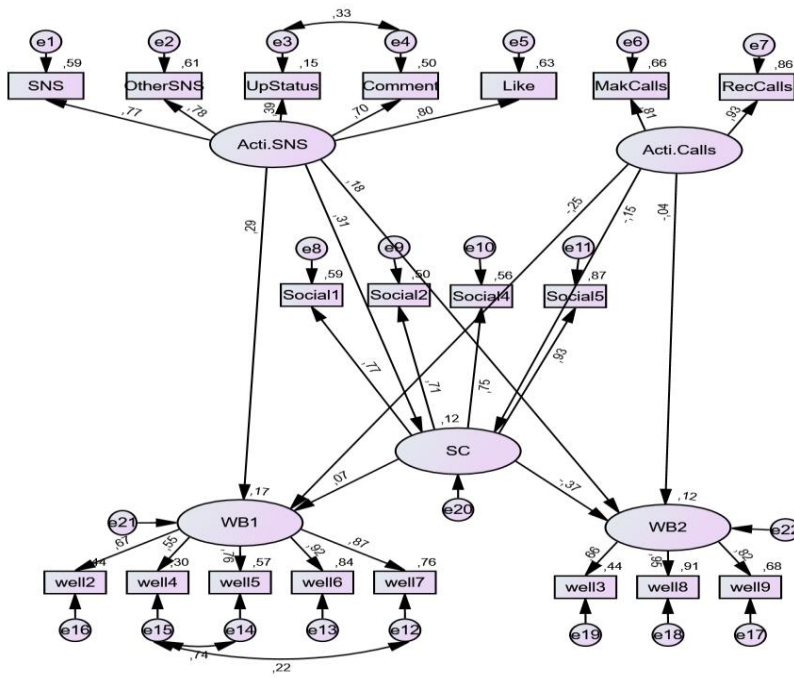
Figure 9a. Structural model Technology Activities, Social Comparison, Well-being Perceptions in the Spanish sample.
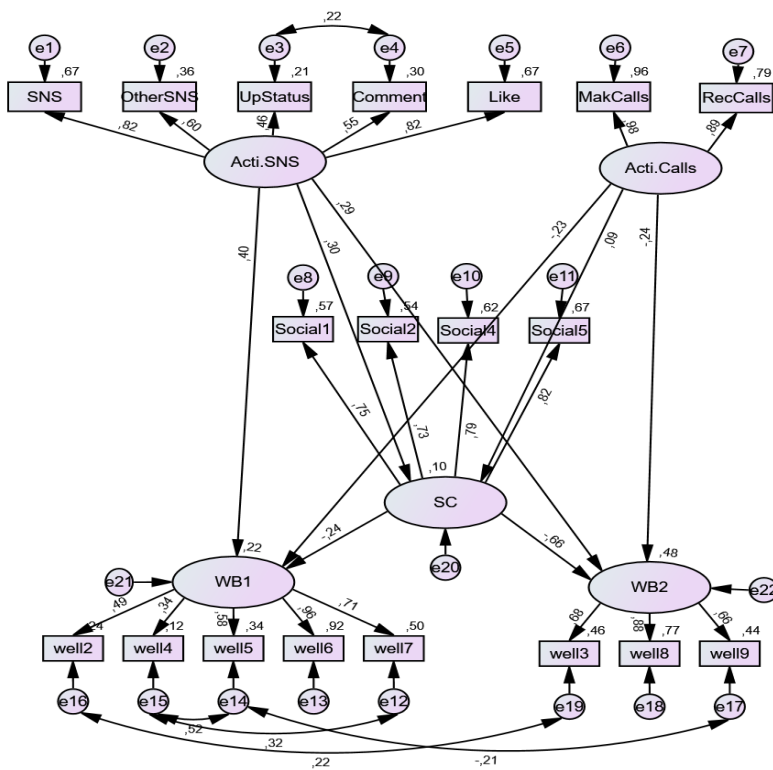
Figure 9b. Structural model Technology Activities, Social Comparison, Well-being Perceptions in the British sample.
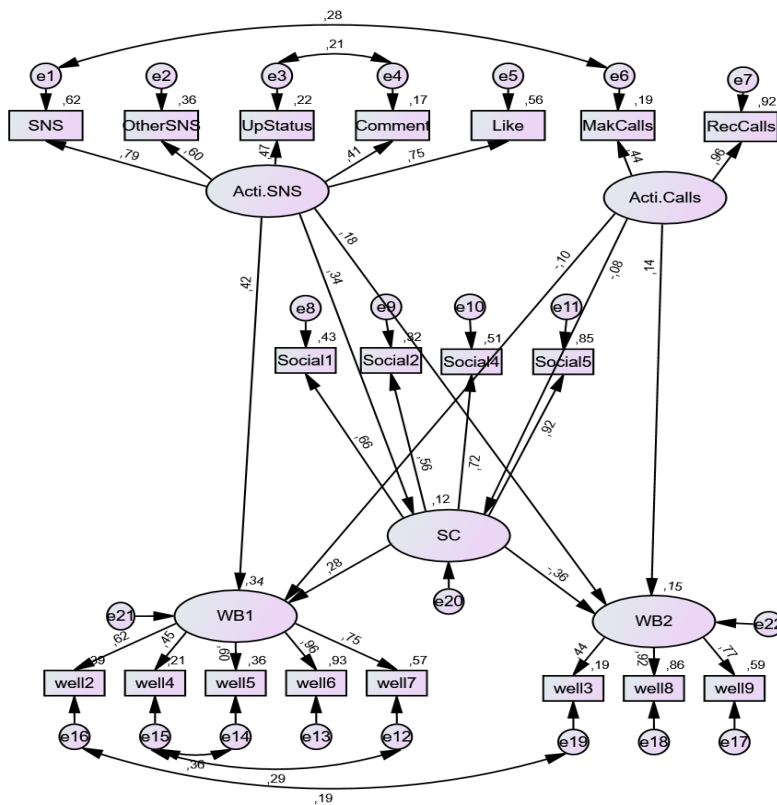
Figure 9c. Structural model Technology Activities, Social Comparison, Well-being Perceptions in the Turkish sample.

Structural Invariance

Model 1 indicated an insufficient fit to the data (χ^2 = 760.52; df = 417, p = .000,

CFI = .91; *TLI* = .89; *RMSEA* = .04 (90% CI, .04–.05). Model 2 (χ2 = 809,91; df = 445, p =

.000, CFI = .90; TLI = .89; RMSEA = .04 (90% CI, .04–.05). ΔCFI was within recommended

guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor

loadings were invariant across groups, structural weights' invariance was tested. When

structural weights were constrained, model 3 fitted the data poorly (χ^2 = 848.96; df = 461,

p = .000, *CFI* = .89; *TLI* = .88; *RMSEA* = .04 (90% CI, .04–.05). ΔCFI had a value of -.01

and therefore structural invariance was met. The researcher proceeded to constrain the

structural covariances in model 4. Again, M4 fits the data mediocrely (χ^2 = 856.80; df = 465,

p = .000, *CFI* = .89; *TLI* = .88; *RMSEA* = .04 (90% CI, .04–.04). When structural covariances

were constrained M4 did not significantly differed from the M3 as ΔCFI had a value of .00.

Structural invariance was met in each of the four levels.

Direct Paths

In the Spanish sample Act.SNS direct effects on well-being perceptions factor 1 positive ($\beta = -.29$, $p < .05$) was significant and negative, but on factor 2 which correspond to well-being perceptions negative ($\beta = .18$, $p > .05$) was not significant. Acti.Calls direct effects on well-being perceptions factor 1 was negative and statistically significant ($\beta = -.25$, $p < .05$), but again it was not significant on factor 2 ($\beta = -.04$, $p > .05$). In the British sample all the direct effects were significant: Act.SNS direct effect on well-being perceptions factor 1 positive ($\beta = .40$, $p < .05$); Act.SNS direct effect on well-being perceptions factor 2 negative ($\beta = .29$, p $< .05$); Acti.Calls direct effect on well-being perceptions factor 1 positive ($\beta = -.23$, $p < .05$) and on well-being perceptions factor 2 negative ($\beta = -.24$, $p < .05$). In the Turkish sample, only the direct effects of Act.SNS to well-being perceptions factor 1 positive ($\beta = .42$, $p < .05$), and factor 2 negative ($\beta = .18$, $p < .05$) were significant; Acti.Calls to well-being perceptions factor 1 positive ($\beta = -.10$, $p > .05$), and to factor 2 negative ($\beta = .14$, $p > .05$).

Indirect Paths

Indirect effects from Act.SNS to well-being perceptions factor 1 positive and factor 2 negative, via social comparison: Turkish sample well-being perceptions positive ($\beta = .09$, [CI]: .02, .10, $p < .05$), well-being perceptions negative ($\beta = -.12$, [CI]: -.12, -.02, $p < .05$); British sample well-being perceptions positive ($\beta = .02$, [CI]: -.07, .12, $p > .05$), well-being perceptions negative ($\beta = -.11$, [CI]: -.28, -.00, $p < .05$) ; Spanish sample well-being perceptions positive ($\beta = .02$, [CI]: -.07, .12, $p > .05$), and negative ($\beta = -.11$, [CI]: -.28, -.00, $p < .05$). Act.Calls indirect effects to well-being perceptions factor 1 (positive) and factor 2

(negative), via social comparison: Turkish sample factor 1 (β = -.02, [CI]: -.08, .02, p > .05),

factor 2 (β = .03, [CI]: -.03, .09, p > .05); British sample factor 1 (β = -.01, [CI]: -.08, .02, p >

.05), factor 2 (β = .05, [CI]: -.02, .22, p > .05); Spanish sample factor 1 (β = -.01, [CI]: -.08,

.02, p > .05), and factor 2 (β = .05, [CI]: -.02, .22, p > .05).

Table 9

Results of tests for invariance across countries

	Model fit				Model difference (ΔM)				
Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
M1	760.52*	417	.043 (.04-.05)	.91	–	–	–	–	–
M2	809.91*	445	.043 (.04–.05)	.90	M2 vs. M1	49.39	28	.00	-.01
M3	848.96*	461	.043 (.04–.05)	.89	M3 vs. M2	39.05	16	.00	-.01
M4	856.80*	465	.043 (.04–.05)	.89	M4 vs. M3	7.84	4	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. *p < 0.05.

Anxiety Perceptions, Social Comparison, Trait Anxiety

The results of the structural invariance testing for the relationships between anxiety perceptions, social comparison, and trait anxiety construct: trait absent (F1) and trait present (F2), are shown below. Models for each country are presented in figures 10a, 10b, and 10c.
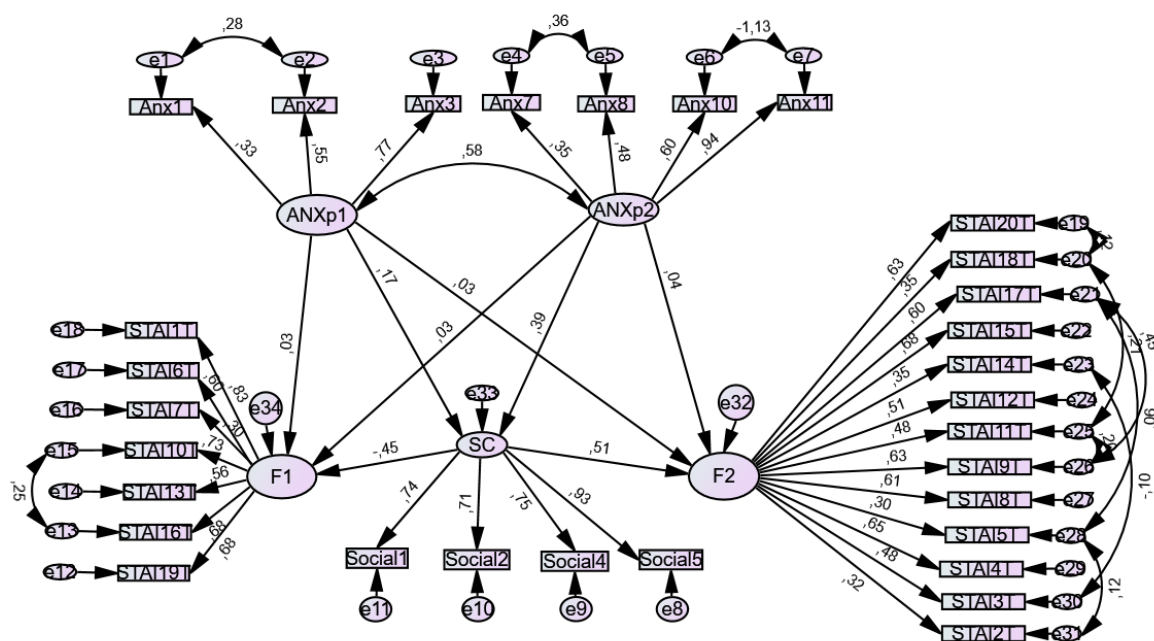
Figure 10a. Structural model Anxiety Perceptions, Social Comparison, Trait Anxiety In the Spanish sample.
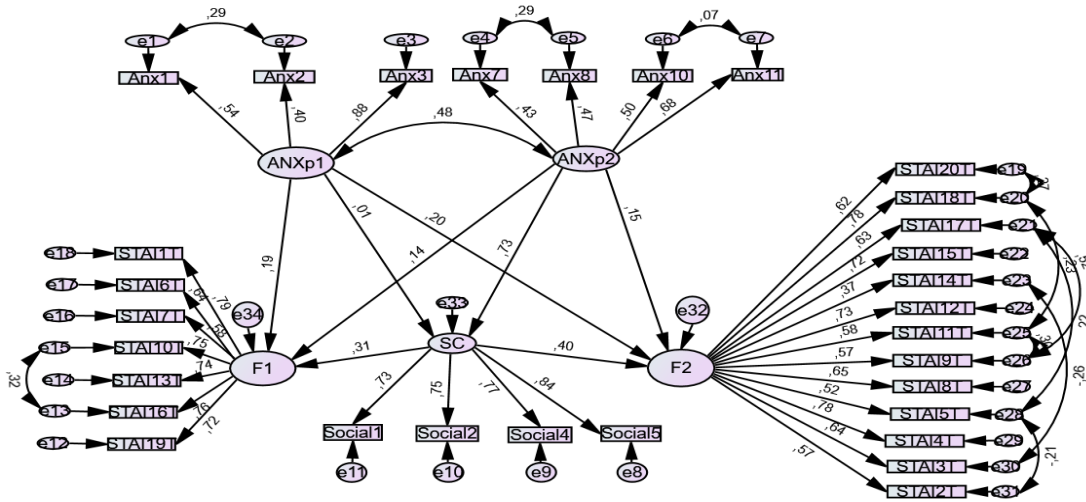
Figure 10b. Structural model Anxiety Perceptions, Social Comparison, Trait Anxiety
In the British sample.
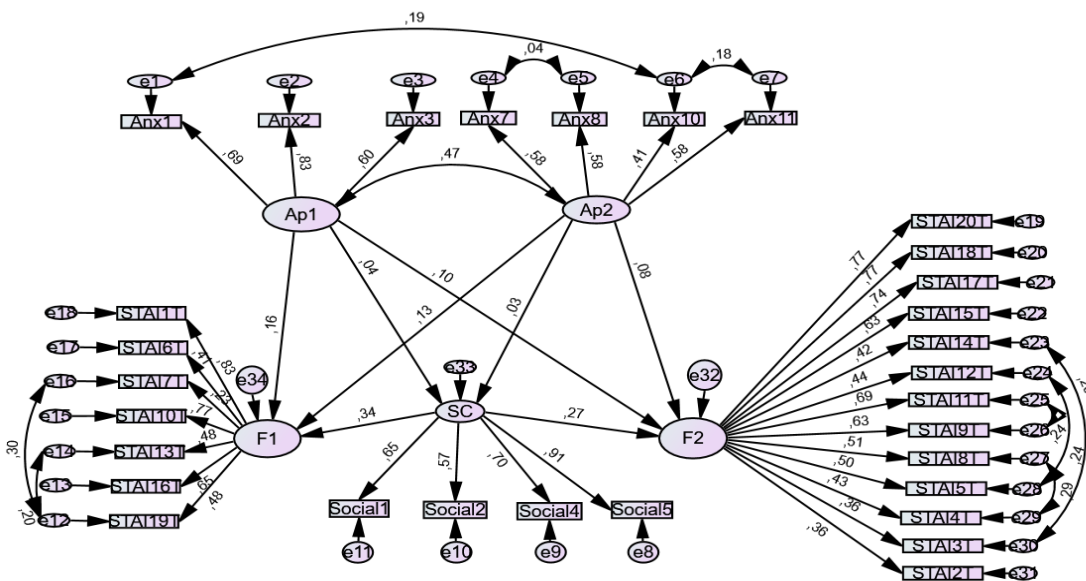
Figure 10c. Structural model Anxiety Perceptions, Social Comparison, Trait Anxiety
In the Turkish sample.

Structural Invariance

Model 1 did not indicate a good fit to the data (χ^2 = 1928.86; df = 1242, p = .000, *CFI* = .86; *TLI* = .85; *RMSEA* = .043(90% CI, .03–.04). Model 2 ($\chi2$ = 2017.32; df = 1294, p = .000, CFI = .86; TLI = .85; RMSEA = .04 (90% CI, .03–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model 3 fitted the data poorly (χ^2 = 2095.83, df = 1310, p = .000, *CFI* = .84; *TLI* = .83; *RMSEA* = .04 (90% CI, .03–.04). ΔCFI had a value of -.02 and therefore structural invariance was not met. The researcher proceeded to constrain the structural covariances in model 4. Again, M4 fits the data mediocrely (χ^2 = 2207.49; df = 1316, p = .000, *CFI* = .82; *TLI* = .81; *RMSEA* = .04 (90% CI, .04–.04). When structural covariances were constrained M4 significantly differed from the M3 as ΔCFI had a value of -.02. Structural invariance was not met.

Direct Paths

The direct effects of anxiety perceptions to trait anxiety were as follow: Spanish sample anxiety perceptions factor 1 cognitive to trait anxiety absent (β = .03, $p > .05$), to trait anxiety present (β = .03, $p > .05$); anxiety perceptions factor 2 social to trait anxiety absent (β = .03, $p > .05$), and to trait anxiety present (β = .04, $p > .05$). British sample anxiety perceptions factor 1 cognitive to trait anxiety absent (β = .19, $p < .05$), to trait anxiety present (β = .20, $p < .05$); anxiety perceptions factor 2 social to trait anxiety absent (β = .14, $p < .05$), and to trait anxiety present (β = .15, $p < .05$). In the Turkish sample all the direct effects were statistically significant: anxiety perceptions factor 1 cognitive to trait anxiety absent (β = .16, $p < .05$), to trait anxiety present (β = .09, $p < .05$); anxiety perceptions factor 2 social to trait anxiety absent (β = .13, $p < .05$), and to trait anxiety present (β = .08, $p < .05$).

Indirect Paths

Indirect effects from anxiety perceptions factor 1 cognitive and factor 2 social, via social comparison to trait anxiety absent (factor 1) and present (factor 2) are presented below:

Spanish sample anxiety perceptions factor 1 cognitive to trait anxiety absent (β = -.24, [CI]: -.30, -.06, $p < .05$), to trait anxiety present (β = -.03, [CI]: -.02, -.06, $p < .05$). Anxiety perceptions factor 2 social to trait anxiety absent (β = .32, [CI]: -.30, -.06, $p < .05$), and to trait anxiety present (β = .04, [CI]: -10.78, .04, $p > .05$).

British sample anxiety perceptions factor 1 cognitive to trait anxiety absent (β = 1.14, [CI]: .25, 1.5, $p < .05$), to trait anxiety present (β = 1.31, [CI]: .25, 1.4, $p < .05$). Anxiety perceptions factor 2 social to trait anxiety absent (β = -4.02, [CI]: -4.1, -1.97, $p < .05$), and to trait anxiety present (β = -4.60, [CI]: -5.0, -1.83, $p < .05$).

Turkish sample anxiety perceptions factor 1 cognitive to trait anxiety absent (β = .16, [CI]: -.01, 1.31, $p > .05$), to trait anxiety present (β = .19, [CI]: -.01, 2.69 $p > .05$). Anxiety perceptions factor 2 social to trait anxiety absent (β = -.36 [CI]: -3.51, .12, $p > .05$), and to trait anxiety present (β = -.42, [CI]: -9.93, .19, $p > .05$).

Table 10

Results of tests for invariance across countries

Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
						Model difference (ΔM)			
M1	1928.56*	1242	.035 (.032-.038)	.86	–	–	–	–	–
M2	2017.32*	1294	.035 (.032-.038)	.86	M2 vs. M1	88.76	52	.00	.00
M3	2095.58*	1310	.037 (.034-.039)	.84	M3 vs. M2	78.26	16	.00	-.02
M4	2207.49*	1316	.039 (.036-.042)	.82	M4 vs. M3	111.91	6	.00	-.02

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, configural invariance; M2, metric invariance; M3, scalar invariance. *p < 0.05.

Anxiety Perceptions, Social Comparison, State Anxiety

The results of the structural invariance testing for the relationships between anxiety perceptions, social comparison, and state anxiety construct, are shown below. The standardized factor loadings and factor covariance of each causal model by country are shown in figures 11a, 11b and 11c.
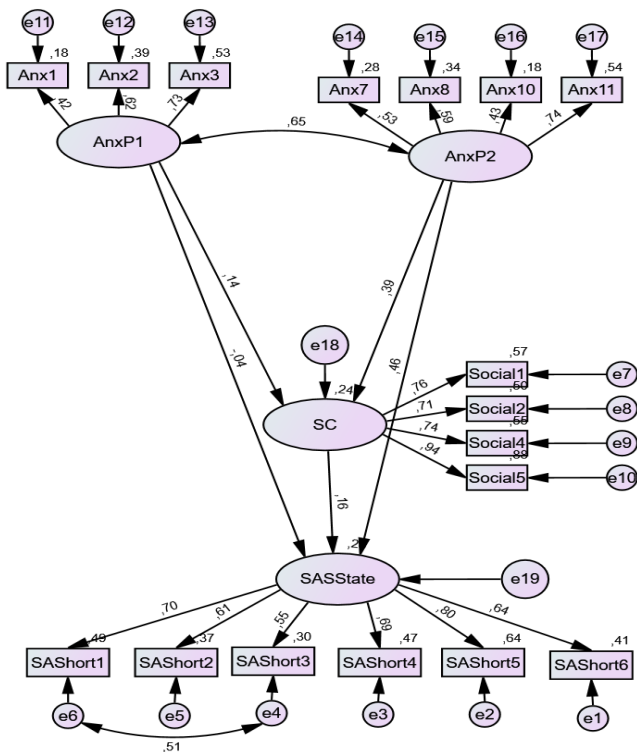
Figure 11a. Structural model Anxiety Perceptions, Social Comparison, State Anxiety in the Spanish sample.
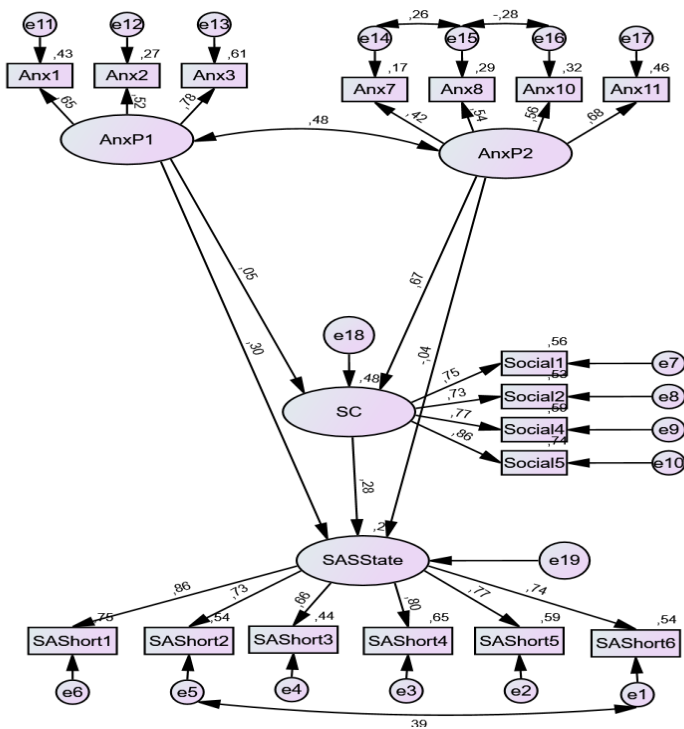
Figure 11b. Structural model Anxiety Perceptions, Social Comparison, State Anxiety in the British sample.
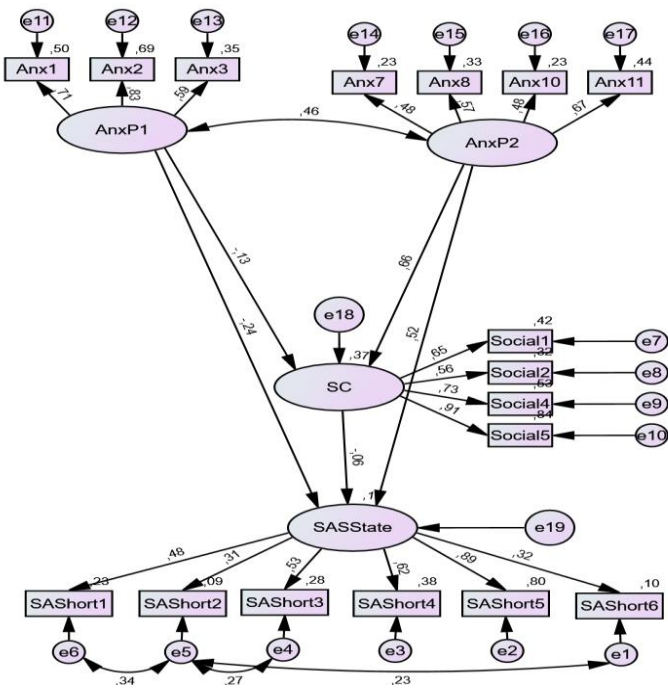
Figure 11c. Structural model Anxiety Perceptions, Social Comparison, State Anxiety in the Spanish sample.

Structural Invariance

Model 1 indicated a good fit to the data (χ^2 = 475.63; df = 330, p = .000, *CFI* = .94; *TLI* = .93; *RMSEA* = .03 (90% CI, .02–.04). Model 2 ($\chi2$ = 528.04; df = 356, p = .000, CFI = .93; TLI = .92; RMSEA = .03 (90% CI, .03–.04). ΔCFI was within recommended guidelines. Thus, factor loadings are operating equivalently across the three groups. As factor loadings were invariant across groups, structural weights' invariance was tested. When structural weights were constrained, the model 3 fitted the data satisfactorily (χ^2 = 544.68, df = 366, p = .000, *CFI* = .93; *TLI* = .92; *RMSEA* = .03 (90% CI, .03–.04). ΔCFI had a value of .00 and therefore structural invariance was met. The researcher proceeded to constrain the structural covariances in model 4. Again, M4 fits the data mediocrely (χ^2 = 550.85; df = 372, p = .000, *CFI* = .93; *TLI* = .92; *RMSEA* = .03 (90% CI, .03–.04). When structural covariances were constrained M4 significantly differed from the M3 as ΔCFI had a value of .00. Structural invariance was met.

Table 11

Results of tests for invariance across countries

Model	χ^2	df	RMSEA (90% CI)	CFI	ΔM	$\Delta\chi^2$	Δdf	ΔRMSEA	ΔCFI
			Model fit			Model difference (*ΔM*)			
M1	475.63**	330	.03 (.02-.04)	.94	–	–	–	–	–
M2	528.04**	356	.03 (.03–.04)	.93	M2 vs. M1	-52.41	26	.00	-.01
M3	544.68**	366	.03 (.03–.04)	.93	M3 vs. M2	16.64	10	.00	.00
M4	550.85**	372	.03 (.03–.04)	.93	M4 vs. M3	6.17	6	.00	.00

Note. RMSEA, root mean square error of approximation; CI, confidence interval; CFI, comparative fit index. M1, unconstrained model; M2, measurement weights' model; M3, structural weights' model, M4 structural covariances' model. ∗p < 0.05.

Direct Paths

The direct effects of anxiety perceptions to state anxiety were as follow: Spanish sample anxiety perceptions factor 2 social to state anxiety ($\beta = .46$, $p < .05$), anxiety perceptions factor 1 cognitive to state anxiety ($\beta = -.04$, $p > .05$); British sample anxiety perceptions factor 1 cognitive to state anxiety ($\beta = .30$, $p < .05$), anxiety perceptions factor 2 social to state anxiety ($\beta = -.04$, $p > .05$); in the Turkish sample the two direct effects were statistically significant: anxiety perceptions factor 1 cognitive to state anxiety ($\beta = -.24$, $p < .05$), anxiety perceptions factor 2 social to state anxiety ($\beta = .52$, $p < .05$).

Furthermore, regarding the direct effect of social comparison to state anxiety the results showed a non-significant direct effect in the Spanish sample ($\beta = .20$, $p > .05$), in the British sample ($\beta = .28$, $p > .05$), and in the Turkish sample ($\beta = -.06$, $p > .05$).

Indirect Paths

Indirect effects' results from anxiety perceptions factor 1 cognitive via social comparison to state anxiety are presented below:

Spanish sample (β = .02, [CI]: -.04, .27, p > .05), British sample (β = .01, [CI]: -.10, .24, p < .05), Turkish sample (β = .01, [CI]: -.02, .14, p > .05).

Indirect effects' results from anxiety perceptions factor 2 social via social comparison to state anxiety: Spanish sample (β = .06, [CI]: -.05, .33, p > .05), British sample (β = .19, [CI]: -.17, .61, p >.05), Turkish sample (β = -.04, [CI]: -.32, .12, p > .05).

Table 12

Summary table of findings of the structural models with respect to the aims of the study.

Structural Models	Multigroup Structural Invariance Outcomes	Direct paths' outcomes	Indirect paths' outcomes (via social comparison)
Anxiety perceptions, social comparison, and satisfaction with life.	Invariance	No significant direct effects obtained from anxiety perceptions to satisfaction with life.	Significant indirect effect from the social dimension of the scale Anxiety perceptions to satisfaction with life
Well-being perceptions, social comparison, loneliness	Invariance	No significant direct effects	Significant indirect effects
Well-being perceptions, social comparison, SPANE	Variance	Significant direct effects	Significant indirect effects
Well-being perceptions, social comparison, perceived social support.	Invariance	Significant direct effects	No significant indirect effects
SNS types, social comparison, anxiety perceptions.	Variance	No significant direct effects	Significant indirect effects indirect effect of Instagram.
SNS types, social comparison, well-being perceptions.	Variance	Significant direct effect of Instagram	Significant indirect effects of Instagram
Technology activities, social comparison, anxiety perceptions.	Invariance	Significant direct effects of SNS activities	Significant indirect effects of SNS
Technology activities, social comparison, well-being perceptions.	Invariance	Significant direct effects of SNS activities	Significant indirect effects of SNS activities
Anxiety perceptions, social comparison, Trait anxiety	Variance	Significant direct effects	Significant indirect effects
Anxiety perceptions, social comparison, State anxiety.	Invariance	Significant direct effects	No significant indirect effects.

Discussion

A substantial body of research focused on the relationships between technology and SNS usage and mental health, well-being, and psychological constructs that may be implicated in these relationships. However, results have been contradictory, and no specific measures have been used consistently in previous research. To overcome this problem, in this study the researcher used the new measures developed, tested, and validated in the previous chapter. These new measures aimed to assess perceptions of well-being, anxiety and social comparison specifically related to technology and SNS usage. With this contribution to the existing literature, and previously assuring the validity of the new measures, the present study aimed to assess the relationships between technology usage, anxiety, and well-being through the assessment of individual perceptions, behaviours, and affective states in university students in three countries (Spain, UK, and Turkey). Moreover, the present study aimed to examine the role of social comparison triggered by the mere usage of SNS as a mediator.

Previous cultural research in psychology has shown that norms for social support seeking, satisfaction with life and well-being factors differ across cultures (Liu et al., 2018). Furthermore, regarding SNS, research has shown that culture is a factor that affects the usage of some platforms as Facebook and how the users behave online (Brailovskaia, & Bierhoff, 2016). Results from this study are in concordance with the previous literature, as the tested models show cultural differences in the direct and indirect effects of perceptions, behaviours of electronic devices and SNS usage and well-being and anxiety outcomes. This study has added to previous research by testing indirect effects more comprehensively especially with reference to the range of variables tested across three cultures.

Anxiety Perceptions, Social Comparison, and Satisfaction With Life

This structural model was shown to be invariant across the three countries. There was a direct effect from anxiety perceptions factor 2 which refers to a more social type of anxiety to social comparison. Nevertheless, there was no significant direct effect from the cognitive factor of anxiety perceptions to social comparison. Regarding the direct effects from anxiety perceptions to satisfaction with life, no statistically significant results were found. Moreover, the indirect effect of anxiety perceptions social (factor 2) to satisfaction with life was mediated by social comparison, while the effect of the cognitive factor of anxiety perceptions on satisfaction with life, was not significantly mediated by social comparison. This finding indicates that anxiety perceptions related to technology and SNS usage do not have a direct effect on satisfaction with life. However, when considering the construct of social comparison, the effect seems to be significant only in the social dimension of the scale, Anxiety perceptions, which in turn makes sense to the researcher.

Well-being Perceptions, Social Comparison, Satisfaction With Life

Structural invariance was achieved for this model created with well-being perceptions negative and positive, social comparison, and satisfaction with life. The direct effects results indicated that there were not significant effects from well-being perceptions to satisfaction with life, except from well-being positive only in the Spanish sample, which showed that more perceptions of well-being positive in relation to technology and SNS usage are related to a higher satisfaction with life. However, when the relationship between well-being perceptions (positive and negative) and satisfaction with life is mediated by social comparison, these indirect effects are significant. This underlines the added value of evaluating the positive and negative aspects of wellbeing as distinct entities. This finding indicates that well-being perceptions do not have a direct effect on satisfaction with life.

However, when social comparison is considered, it seems that indirect effects from well-being perceptions to satisfaction with life are present.

Well-being Perceptions, Social Comparison, and Loneliness

This structural model indicated variance across the three countries. Perhaps the cause of this, as explained in the previous chapter, it is that the UCLA scale of 20 items required numerous modifications, allowing error covariance between some of the items, and even with these, the configural model still fitted the data poorly based on the CFI value. Therefore, this indicated that the one factor UCLA scale of 20 items may not be an appropriate measure for cross-cultural studies of loneliness. Perhaps the use of fewer but more discriminatory items is the way forward along with more subscales. However, in this study, uni-dimensionality was used to maintain parsimonious models. Moreover, the direct effects between well-being perceptions and loneliness were different across the three countries. For instance, the relationship between well-being perceptions positive and loneliness was negative and statistically significant in the Spanish sample. While this relationship, was non-significant in the British and Turkish samples. Furthermore, well-being perceptions negative direct effect on loneliness was significant in the three countries. The mediating effect of social comparison in the relationship between well-being perceptions and loneliness was significant in the three countries. This study has clearly demonstrated the value and consistency of social comparison as a mediating construct across the models. Well-being perceptions seem to have a direct effect and an indirect effect on loneliness (via social comparison).

Well-being Perceptions, Social Comparison, Positive and Negative Experience

This model showed structural invariance across the three countries. Well-being perceptions negative had a negative direct effect on negative experience in the British sample. Moreover, social comparison had a direct effect on positive experience (negative

relationship) and on negative experience (positive relationship) as expected, in the three countries. The dual function of inverse relations adds more quality to the authority of the outcomes. The results seem to indicate that there are no effects from well-being perceptions to positive and negative experience and the indirect effects from well-being perceptions to this construct via social comparison were only significant in one of the three samples.

Well-being Perceptions, Social Comparison, Perceived Social Support

This model was not invariant across countries. This perhaps is caused by different direct effects. For instance, in the Turkish sample well-being perceptions positive had a positive effect on perceived social support from family. While the direct effects in the Spanish sample were not significant. Moreover, in the British sample well-being perceptions negative showed a positive direct effect on perceived social support from friends and significant others, but not on perceived social support form family. This may suggest that underlying cultural values differ in some respects and therefore relationships between psychological constructs function differentially within the context of this study even if there is invariance in the structure of the constructs themselves. Despite cultural differences, there is an overall effect from well-being perceptions to perceived social support. However, social comparison does not seem to mediate these relationships.

Social Network Site Types, Social Comparison, and Anxiety Perceptions

The structural model created between SNS types (Instagram, Facebook, and WhatsApp), social comparison, and anxiety perceptions showed structural variance. No direct effect was found from the different types of SNS and anxiety perceptions in any of the three countries. However, regarding indirect effects mediated by social comparison, results were very different depending on the country. In the Spanish sample all the indirect effects were not significant. However, in the British sample the indirect effect of Instagram mediated by

social comparison was significant for both factor of anxiety perceptions, the cognitive and the social. This was not the case for the SNS platform Facebook, and for WhatsApp only was significant the indirect effect to the social factor of anxiety perceptions. In the Turkish sample, only Instagram showed indirect effects, mediated by social comparison, to anxiety perceptions cognitive and social factors. In addition to the previous points on cultural differences in the functionality of constructs, there are also differences as well as similarities in SNS platforms across culture. As noted, the addition of indirect effects adds value to the complexity of the findings. Instagram seems to be the social network sites platform that exacerbates feelings of anxiety when social comparison is taking place. This an important finding because guidelines could be developed regarding how to use this platform, reducing the potential harmful social comparison of the user with others.

Social Network Types, Social Comparison, and Well-being Perceptions

Results found in this model were like those found in the previous model with anxiety perceptions. The structural model was not invariant. Direct effects in the Spanish sample were not significant. In the British sample and the Turkish samples, Instagram had a significant direct effect in well-being perceptions in both factors, negative and positive. However, in the British sample this effect indicated that higher Instagram usage was related to lower positive perceptions of well-being, and lower negative perceptions of well-being. Nevertheless, in the Turkish sample, higher Instagram usage was related to higher positive perceptions of well-being, and lower negative perceptions of well-being. The result found in the Turkish sample makes sense for the researcher, because users who use Instagram more frequently believe that this usage has benefits for their well-being, even if this does not translate to real benefits (although perception is arguably a subjective benefit even if temporary).

Regarding indirect effects, again the British and Turkish samples showed and indirect effect form Instagram to well-being perceptions, via social comparison. This finding is suggesting that the SNS that influences the perceptions of well-being is Instagram, and that this relationship is also mediated by the construct social comparison, which does not have a mediating role on the other SNS platforms.

Technology Activities, Social Comparison, Anxiety Perceptions

The structural model created with technology activities, social comparison, and anxiety perceptions showed invariance across the three countries. As expected, the SNS activities (e.g., likes, comments, etc) had a direct effect on social comparison in the three countries. The activities, making calls and receiving calls, did not show a significant direct effect to social comparison. Moreover, SNS activities had a direct effect on anxiety perceptions cognitive. However, this effect was negative and only significant in the British and Turkish samples, indicating that higher frequency of liking, commenting, and doing other SNS activities was associated with lower perceptions of anxiety cognitive (e.g., seeing lots of different news and information online initiates feelings of anxiety in me). The relationship with anxiety perceptions social was not significant in any sample. In addition, results showed significant indirect effects between SNS activities and anxiety perceptions cognitive and social, mediated by social comparison in the three countries but the activities related to calls did not show an indirect effect to anxiety perceptions. This means that social comparison is a measure that is effectively capturing the construct in the context of SNS, which was the aim of the researcher. Therefore, this demonstrates that social comparison is an invaluable research construct because of its centrality, consistency, and apparent influence across culture. This finding is important, because as it was expected, the activities carried out on SNS, could potentially induce social comparison in the user and increase the anxiety perceptions.

Technology Activities, Social Comparison, and Well-being Perceptions

This model was invariant across the three countries. Results revealed that SNS activities had a direct effect on well-being perceptions positive, which was negative. This result was congruent in the three countries. However, the direct effect from SNS activities to well-being perceptions negative was not significant in the Spanish sample, but it was significant and positive in the British and Turkish samples. Finally, the activities related to calls did not have direct effects on well-being perceptions, and neither indirect effect mediated by social comparison. Nevertheless, SNS activities had indirect effects via social comparison to positive perceptions of well-being in the Turkish sample, and to negative perceptions of well-being in the three samples. Added value in this study is the combination of indirect effects in relation to the twin aspects of positive and negative outcomes. This finding seems consistent and expected based on the previous finding in the anxiety perceptions model. Again, it seems that SNS activities increase social comparison, and this exacerbates the relationship between these activities and well-being perceptions.

Anxiety Perceptions, Social Comparison, Trait Anxiety

Structural invariance was not met in this model. The model showed direct effects from anxiety perceptions to trait anxiety significant in the Turkish and British samples. For both samples, these effects were positive from anxiety perceptions cognitive to trait anxiety present and trait anxiety absent. Moreover, from anxiety perceptions social to trait present and trait absent the effects were positive. Indirect effects in the Turkish sample were not significant. While these were significant in the Spanish and British samples, from anxiety perceptions cognitive to trait present and absent via social comparison. However, anxiety perceptions social in the Spanish Sample had an indirect effect through social comparison to trait absent but not to trait present. Nevertheless, in the British sample this indirect effect showed to be significant for trait absent and present. The findings from this model seem to

indicate that there are direct effects of anxiety perceptions to trait anxiety. And it also seems that an indirect effect from anxiety perceptions to trait anxiety via social comparison is present, although these are not present in all the samples.

Anxiety Perceptions, Social Comparison, and State Anxiety

Results from this model showed that the structural model is invariant. Social comparison did not have a significant direct effect on state anxiety. In the Turkish sample anxiety perceptions social and cognitive had a significant direct effect on state anxiety. However, in the Spanish sample anxiety perceptions cognitive did not have a significant direct effect while anxiety perceptions social had a significant and positive effect. By contrary, in the British sample only the anxiety perceptions cognitive had a significant and positive direct effect on state anxiety. Regarding indirect effects from anxiety perceptions to state anxiety via social comparison, non-significant effects were found except from anxiety perceptions cognitive to sate anxiety in the British sample. The finding from this model seems to indicate a direct effect from anxiety perceptions to state anxiety. However, in this relationship the results seem to indicate that social comparison does not act as a mediator.

<div align="center">

Conclusion

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Overall, the findings suggest that the relationships between well-being and anxiety perceptions in relation to electronic devices and SNS usage, loneliness, satisfaction with life, perceived social support, positive-negative experience, and trait-state anxiety, are different based on the different cultures. Despite the differences across culture, this study found that social comparison as a construct specifically related to SNS usage assessed through the measure developed by the researcher, seems to mediate the relationships between perceptions of anxiety and well-being, satisfaction with life, loneliness, and trait anxiety. When mediating the relationships between different SNS types and well-being and anxiety perceptions, it

seems that the mediating role of social comparison is of relevance for Instagram, and not for Facebook. Finally, another important finding is the effect of SNS activities to well-being and anxiety perceptions cognitive but not the social factor. The values of those relationships seem to be negative from SNS activities to anxiety perceptions, and positive to well-being perceptions-except for the Spanish sample. These results found in the British and Turkish samples are unexpected because it is indicating that the frequency of which the participants take part in SNS activities, has a positive effect on well-being perceptions, either positive or negative perceptions. However, in the Spanish sample, the result takes a clearer direction, indicating that SNS activities' participation has a negative effect on well-being perceptions positive and a positive effect on well-being perceptions negative, although the latest was non-significant. Overall, the results suggest that students who use more frequently SNS perceive that electronic devices and SNS do not cause them anxiety. However, in relation to well-being, both more positive and negative perceptions are related to a higher participation in SNS activities.

In the next chapter, the researcher will consider other factors that are related to technology usage, well-being and mental health in university students, such as sleep and the recent concept of fear of missing out (FoMO).

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Chapter 5- Night-time use of Electronic Devices, Fear of Missing out, Sleep Difficulties, Anxiety, and Well-being in University Students

Abstract

Sleep is widely considered an important factor in mental health. In addition, a recent factor that has been studied in this area of research is the fear of missing out. This construct seems to influence the ability to set boundaries around sleep time and the use of electronic devices. There is a lack in the literature examining general electronic devices usage habits during night-time, fear of missing out, well-being and anxiety levels. Identifying factors that influence sleep (such as the electronic devices usage) and psychological constructs that predict this usage, such as fear of missing out, can help to develop targeted intervention programs. Findings from this study suggest that the construct of fear of missing out acts as a predictor of electronic devices usage at night-time. Moreover, results revealed that this night-time usage of electronic devices is a predictor of lower well-being levels, higher sleep problems and anxiety. Pertaining to the contribution of this study to clinical practice in psychology, the results suggest the necessity to evaluate students' levels of fear of missing out.

Introduction

There is an increase in studies examining the potential risks of electronic media devices use on psychological health and well-being. However, there is an insufficient foundation of evidence or a comprehensive model in this area of research (Višnjić et al., 2018). The ever-increasing use of electronic media devices makes a constant challenge of investigation for researchers in this area. The concern on some psychological health aspects and well-being is especially relevant in university student populations. This is because university students endure a special period of challenges and risks, which can result in higher

rates of mental disorders' symptoms (Zivin et al., 2008). Moreover, students are the most frequent users of technology (Wentworth & Middleton, 2014).

A higher use of electronic media devices may cause various physical and psychological health problems (Demirci et al., 2015). For instance, using technology before bed has been linked to difficulty falling asleep, repeated awakenings at night, or early wake times (Hershner & Chervin, 2014). Despite these symptoms, students have intense use of electronic devices in the hour before going to sleep (Orzech et al., 2016).

A study conducted by Moulin (2015) found through reported use of media and reported sleep inadequacy, that participants spent a substantial time of the evening using electronic media and that this use was related to lower quality of sleep. In addition, some studies have suggested that keeping the electronic devices in the bedroom is related to poorer sleep in students (Adachi-Mejia et al., 2014; Exelmans & Van den Bulck, 2016; Whipps et al., 2018). Also, prior to bedtime, it seems important the time spent using the devices. For instance, a study conducted by Orzech et al., (2015) found that in the 2 hours prior to bedtime, a longer use of digital media was associated with poorer sleep outcomes. The impacts on sleep are related to several mechanisms including the displacement of sleep due to technology use, the stimulating effects that increase the physical arousal in the user and the effects of light from the screen that affects physiological markers such as melatonin (Cain and Gradisar, 2010).

One emerging concept that may influence the ability to set boundaries around sleep time and the use of technology is 'the fear of missing out' (FoMO) (Rogers and Barber, 2019; Scott and Woods, 2018). This construct is defined as the pervasive apprehension that rewarding experiences and events are taking place, and that one might be missing them (Przybylski et al., 2013). In relation to Facebook use and FoMO, Przybylski et al., (2013)

found an association between higher Facebook use, FoMO and use of Facebook before falling asleep at night. Thus, the desire to be social and FoMO, seems to compel students to keep their electronic devices near bed at night, which may influence their quality of sleep, and ultimately their well-being.

Moreover, it is important to note that in the investigation of sleep quality, factors such as the climate (Smith et al., 2002; Tonetti et al., 2012) and latitude of the country in where the participants are living seem to play an important role. For instance, several studies have reported correlations between latitude and morningness (going to bed earlier and getting up earlier) or eveningness (going to bed later and getting up later) preference, showing that a higher evening orientation was correlated with an increasing distance from the equator (Borisenkov, 2010; Randler & Rahafar, 2017; Randler, 2008;) and that this orientation was associated with lower subjective sleep quality (Roeser et al., 2012). Although, whether there is a significant difference between countries regarding the use of electronic devices during night-time - based on the morningness-eveningness preference or the climate - remains an open question that has not been explored yet it is out of the scope of this study. We hypothesise that there will be a significant difference between Spain and UK regarding the use of electronic devices at night-time and sleep quality that could be attributed to latitude, climate and/or cultural factors.

Thus, the current study's aims are to (1) explore the use of electronic media devices in pre-sleep time, levels of quality of sleep, anxiety and well-being in university students in the UK and Spain, (2) whether university students' fear of missing out (FoMO) is associated with more usage of electronic devices 2 hours before going to sleep, and more usage of electronic devices in bed.

Hypotheses:

H1a:

Electronic devices usage 2 hours before going to sleep is associated with lower quality of sleep, lower well-being levels, and higher anxiety levels.

H1b:

A longer usage of electronic devices in the 2 hours prior to bedtime is associated with lower quality of sleep, lower well-being levels, and higher anxiety levels.

H2a:

Electronic devices usage while already in bed is associated with lower quality of sleep, lower well-being levels, and higher anxiety levels.

H2b:

A longer usage of electronic devices in bed is associated with lower quality of sleep, lower well-being levels, and higher anxiety levels.

H3:

FoMO is associated with a higher usage of electronic devices at nighttime.

Method

Participants and Procedure

Participants were required to be university students aged 18 or older. Both users and non-users of several digital technologies, new applications and SNS were invited to participate. Samples were formed by $N = 159$ British participants, and $N = 172$ Spanish. The web host used for the questionnaires and data collection was Qualtrics.com. This study had been approved by the University's Ethics Committee prior to its commencement.

The questionnaires were administered to Schools within Liverpool John Moores University, as well as in the University of Granada (Spain). The participants in UK were aged between 18 and 45 years, with a mean (*M*) of 23.08 and a standard deviation (*SD*) of 5.45; and in Spain between 18 and 30 years, with a mean of 20.17 *SD* = 2.35. With reference to gender: in UK 79.2% were females *N* = 126, in Spain 87.8% were females *N* = 151.

The UK sample included participants studying a level 8 course (PhD or professional doctorate) (13.8%) *N* = 22 and participants studying a level 7 course (PGCERT, PGDIP, Masters) (17.6%) *N* = 28, level 6 (3rd year) (22.6%) *N* = 36, level 5 (2nd year undergraduate) (14.5%) *N* = 23, level 4 (1st year undergraduate) (26.4%) *N* = 42 and level 3 (foundation) (5%) *N* = 8. Moreover, 97.5% were full-time students *N* = 155. The Spanish sample included participants studying a level 8 course (PhD or professional doctorate) (0.56%) N = 1, level 7 course (PGCERT, PGDIP, Masters) (1.13%) *N* = 2, level 6 (3rd year and 4th year) (9.9% and 2.3%) *N* = 17, level 5 (2nd year undergraduate) (27.9%) *N* = 48, and level 4 (1st year undergraduate) (58.1%) *N* = 100. In addition, 98.3% were full-time students *N* = 169.

Materials

Levels of anxiety were assessed through the State-Trait Anxiety Inventory (STAI; Spielberger, 1983). The state portion of the STAI consists of 20 statements that assess feeling states with Likert-type response options ranging 1 = not at all to 4 = very much so. The trait portion of the STAI will assess anxiety-proneness, to examine how people generally feel. This has the same number of items and response format as its state counterpart. Higher scores indicate greater anxiety. The possible range of scores in this scale for the Trait and the State subscales is between 20 and 80.

For well-being the validated scales used, included aspects of social and psychological well-being. The different scales used are presented below.

The Satisfaction With Life (Dianer et al., 1985) is formed by 5 items using a 7-point scale that ranges from 7 strongly agree to 1 strongly disagree. Scores were not reversed, as higher scores indicate higher levels of satisfaction with life. The possible range of scores in this scale of Satisfaction with Life is between 5 and 35.

The UCLA Loneliness Scale (Russell, 1996) is formed by 20 items. The response scale ranges from O ("I often feel this way"), S ("I sometimes feel this way"), R ("I rarely feel this way"), N ("I never feel this way"). The scores are O's =4, all S's =3, all R's =2, and all N's =1. Therefore, higher scores indicate higher levels of loneliness. The possible range of scores in this UCLA Loneliness scale is between 20 and 80.

The Scale of Positive and Negative Experience (SPANE; Dianer et al., 2009) includes 12 items. The response scale ranges from 1 to 6: Very Rarely or Never = 1, Rarely = 2, Sometimes = 3, Often = 5, Very Often or Always = 6. Higher scores indicate the higher experience of positive or negative feelings. The possible range of scores in this scale for the Positive and the Negative experience is between 6 and 36 in each dimension.

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988) is a 12-items measure with a response scale from 1 "Very Strongly Disagree" to 7 "Very Strongly Agree". Higher scores indicate higher levels of perceived social support. The possible range of scores in the MSPSS is between 12 and 84 in each dimension.

Sleep was measured using Pittsburgh Sleep Quality Index. The PSQI is a 19-item self-report questionnaire that measures sleep quality during the previous month to discriminate between good and poor-quality sleep. The PSQI generates seven domains for subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, sleep medication, and daytime dysfunction, with each component score ranging from 0 to 3. Higher scores on

PSQI denote more sleep problems. The possible range of scores in the PSQI is between 0 (not difficulty) and 21 (severe difficulties).

The Fear of Missing Out scale (FoMOs; Przybylski, Murayama, DeHaan & Gladwell, 2013) was used to measure participants' fear of missing out. The scale consists of 10 items with a response Likert scale ranging from 1 (Not at all true of me) to 5 (Extremely true of me). Higher scores indicate higher levels of FoMO. The possible range of scores in the Fear of Missing Out scale is between 10 and 50.

The measure assessing typical electronic devices usage at night-time included 8 items that were developed in the current study. An example of these items is: "How often do you use electronic device(s) (computer, Ipad/tablet, cell phone/smartphone, etc.) nightly in the 2 hours before going to bed?'. This block was formed by different responses scales. For item 1 (At nighttime, do you have a cut off point to stop using your electronic device or do you keep going until you are too tired to continue?) the response scale was 1 = I have a cut-off point or 2 = I keep going until I am too tired. For the next items: item 2 (Are you strict at switching your electronic device(s) off at a set time nightly?), item 3 (How often do you use electronic device(s) (computer, Ipad/tablet, cell phone/smartphone, etc.) nightly in the 2 hours before going to bed?), item 5 (How often do you use your electronic device(s) while you are already in bed), item 7 (Is your electronic device(s) in the bedroom while you sleep?) and item 8 (Are you likely to go back to your electronic device(s) (because you have forgotten something, or a notification arrives to your devices) right away after you get in bed to sleep?), the response scale range from 1 = Never to 5 = Always. Finally, for the item 4 (If you use electronic device(s) in the 2 hours before sleep, how much longer do you use them?) and item 6 (If you use electronic device(s) in bed, how much longer do you use them?) the response scale includes 1 = 0 minutes, 2 = 5-15 minutes, 3 = 15-30 minutes, 4 = 30-45 minutes, 5 = 45-60 minutes, and 6 = More than 60 minutes. The sum of all the scores constitutes the global

punctuation of night-time use of electronic devices. Higher punctuation indicates higher usage of electronic devices at night-time. The possible scores range from 8 to 39.

Statistical Analyses

Using SPSS 26.00, all data were explored and screened to see the patterns that emerged and to test the quality of the data. In the first place this was through descriptive statistics such as means, standard deviations, range, frequency, and charts such as histograms. The data were tested for reliability (alpha - looking for .7 or above) and normality through skewness and kurtosis (looking for values below 1.96), or ideally below 1.

Relationships between variables were tested initially through simple bivariate correlations. This allowed for the testing of hypotheses at these basic levels. Hypotheses were then explored further by multivariate linear regression, through which night-time usage of electronic devices total was postulated as predictor of sleep difficulties, lower well-being levels, and higher anxiety. Furthermore, a simple linear regression was conducted in which FoMO was postulated as a predictor of a higher usage of electronic devices at night-time.

Results

Descriptive Statistics

The descriptive statistics shown in Table 1 demonstrate that the data were normally distributed, with scores for both skewness and kurtosis being small across all the measures. Furthermore, reliability is demonstrated with adequate Cronbach's α scores. In the night-time usage of electronic devices block, the item number 9 was deleted because its deletion increased Cronbach's Alpha coefficient in the Spanish and the UK samples.

Table 1

Descriptive Statistics for Study Variables

Scales	Country	*M*	*SD*	Cronbach's α	Skewness	Kurtosis	Maximum	Minimum
PSQI	UK	7.83	3.77	.72	.61	-.16	17	1
	Spain	6.35	3.16	.70	.76	.67	17	1
Spane P	UK	20.81	4.50	.90	-.40	.16	30	7
	Spain	22.80	4.03	.90	-.25	-.17	30	12
Spane N	UK	16.51	4.72	.85	.36	-.15	30	6
	Spain	15.32	4.12	.81	.29	-.09	29	7
FOMO	UK	23.48	7.60	.85	.46	-.53	43	10
	Spain	22.66	6.65	.84	.79	.45	43	11
SWL	UK	21.40	6.92	.88	-.24	-.83	35	6
	Spain	25.11	5.93	.86	-.69	.02	35	8
UCLA	UK	44.95	12.30	.94	.26	-.64	77	21
	Spain	39.82	10.43	.94	.48	-.43	66	21
MSPSS	UK	64.17	14.30	.91	-.99	.92	84	12
	Spain	69.56	12.36	.93	-1.36	2.12	84	15
STAI-T	UK	51.19	11.55	.90	.28	-.60	78	26
	Spain	42.95	10.84	.91	.22	-.53	70	22
STAI-S	UK	44.83	13.29	.95	.25	-.51	77	21
	Spain	37.98	9.94	.92	.59	.02	70	20
NUD	UK	32.35	5.30	.81	-1.0	.79	44	19
	Spain	30.76	4.68	.74	-.40	-.22	39	17

Note. PSQI = Pittsburgh Sleep Quality Index; Spane P = Positive Experience; Spane N = Negative Experience; FOMO = Fear of Missing Out; SWL = satisfaction with life; UCLA = loneliness; MSPSS = perceived social support; STAI-T = anxiety trait; STAI-S = anxiety state; NUD = night-time usage of electronic devices.

Table 2

Descriptive Statistics for separate items of night-time usage of electronic devices

Scales	Country	*M*	*SD*	Skewness	Kurtosis	Maximum	Minimum
2hr	UK	4.75	.55	-2.64	8.09	5	2
	Spain	4.48	.78	-1.99	5.06	5	1
Dur2hr	UK	4.94	1.16	-.95	-.002	6	2
	Spain	4.74	1.17	-.59	.18	6	2
BedU	UK	4.28	1.08	-1.65	2.08	5	1
	Spain	4.10	1.01	-.11	.18	5	1
DurB	UK	4.28	1.56	-.42	-1.07	6	1
	Spain	3.98	1.39	-.07	.18	6	1

Note. Note. 2hr = electronic devices usage 2 hours before going to sleep; Dur2hr = duration of electronic devices usage in the 2 hours before going to sleep; BedU = electronic devices usage in bed; DurB = duration of electronic devices usage while already in bed.

Correlational Analysis

The measures were correlated to identify the relationship between the variables in each country, as shown in table 3 below.

Table 3

Intercorrelations for Study Variables Disaggregated by Country

Variables	1	2	3	4	5	6	7	8	9	10
1. PSQI	-	-.47**	.53**	.15	-.55**	.53**	-.34**	.61**	.59**	.35**
2. SpaneP	-.27**	-	-.68**	-.16*	.65**	-.65**	.58**	-.72**	-.77**	-.27**
3. SpaneN	.49**	-.53**	-	.30**	-.57**	.60**	-.36**	.80**	.82**	.29**
4. FOMO	.10	-.20*	.21**	-	-.25**	.32**	-.06	.34**	.27**	.28**
5. SWL	-.28**	.66**	-.39**	-.08	-	-.66**	.57**	-.66**	-.66**	-.25**
6. UCLA	.28**	-.60**	.46**	.17*	-.56**	-	-.65**	.73**	.68**	.24**
7. MSPSS	-.19*	.47**	-.23**	.05	.52**	-.69**	-	-.47**	-.47**	-.26**
8. STAIT	.43**	-.69**	.68**	.38**	-.56**	.65**	-.40**	-	.87**	.29**
9. STAIS	.42**	-.61**	.65**	.30**	-.54**	.57**	-.41**	.78**	-	.27**
10. NUD	.27**	-.19*	.29**	.25**	-.02	.06	.10	.19*	.19*	-

Note. The results for the UK sample (*n* = 159) are shown above the diagonal. The results for the Spain sample (*n* = 172) are shown below the diagonal. PSQI = Pittsburgh Sleep Quality Index; Spane P = Positive Experience; Spane N = Negative Experience; FOMO = Fear of Missing Out; SWL = satisfaction with life; UCLA = loneliness; MSPSS = perceived social support; STAI-T = anxiety trait; STAI-S = anxiety state; NUD = night-time usage of electronic devices. *$p \leq 0.05$, **$p \leq 0.01$.*

There was a medium positive correlation between night-time usage of electronic devices and sleep problems in the Spanish sample ($r=.27$, $p<.01$) and in the British sample ($r=-.35$, $p<.01$). Furthermore, there was a medium and positive correlation between FoMO and night-time usage of electronic devices in the Spanish sample ($r=-.25$, $p<.01$) and in the

British sample (r=-.28, p<.01), suggesting that participants who had higher levels of FoMO used with higher frequency electronic devices at night-time, providing support for H3. Moreover, correlations between separate items from the block of night-time usage of electronic devices and the variables of interest are presented in table 3.

There was a non-significant correlation between electronic devices usage 2 hours before going to sleep and higher sleep problems in the Spanish sample (r=.08, p>.05), while in the British sample, this correlation was significant but small (r=.19, p<.05). This was unexpected as it was hypothesized significant associations in H1a.

In addition, in the British sample non-significant associations were found between electronic devices usage 2 hours before going to sleep and positive experience (Spane positive) (r=-.14, p>.05), negative experience (r=.14, p>.05), satisfaction with life (r=-.14, p>.05), and loneliness (r=.13, p>.05). Furthermore, a significant, negative, and small correlation between electronic devices usage 2 hours before going to sleep and perceived social support (r=-.16, p<.05) was found, suggesting that participants who used more frequently electronic devices 2 hours before going to bed had less perceived social support. Finally, associations between electronic devices usage 2 hours before going to sleep and anxiety trait was significant in the British sample (r=.17, p<.05) but not significant for anxiety state (r=.16, p>.05). This result could indicate that participants who used more electronic devices 2 hours before going to sleep had higher levels of anxiety trait, which refers to the stable anxiety disposition, but this usage did not associate with the anxiety state.

In the Spanish sample, electronic devices usage 2 hours before going to sleep was not significantly associated with positive experience (r=.01, p>.05), but was positively and significantly associated with negative experience (r=.16, p>.05), although the correlation was small. Additionally, the correlations found between this item and satisfaction with life (r=.10,

p>.05), loneliness (r=.04, p>.05), perceived social support (r=.03, p>.05), anxiety trait (r=.03, p>.05), and anxiety state (r=-.01, p>.05), were not significant. Therefore, these results did not show support for H1a.

A longer usage of electronic devices in the 2 hours prior to bedtime was found to be positively and significatively correlated with sleep difficulties, in the Spanish (r=.18, p<.05) and British (r=.21, p< .01) samples. Furthermore, this item was found to be non-significantly correlated with positive and negative experience in the British sample, respectively: (r=-.13, p>.05), and (r=.07, p>.05). However, in the Spanish sample significant and small correlations were found between this item and positive (r=-.16, p>.05) and negative experience (r=.19, p>.05). The item was not significantly correlated with the rest of the variables in any of the two countries: satisfaction with life Spain (r=-.11, p>.05), UK (r=-.14, p>.05); loneliness Spain (r=.10, p>.05), UK (r=.14, p>.05); anxiety trait Spain (r=.12, p>.05), UK (r=.14, p>.05); and anxiety state Spain (r=.13, p>.05), UK (r=.11, p>.05). However, a significant correlation was found between the item assessing duration of usage of electronic devices in the 2 hours prior to bedtime and perceived social support in the British sample (r=-.23, p<.01), and as expected this correlation was negative. Nevertheless, in the Spanish sample no correlation was found between the item of interest and perceived social support (r=.00, p>.05). Therefore, based on these findings H1b was not fully supported.

The item assessing electronic devices usage while already in bed followed a similar pattern to the previously explained one, as correlations found were different depending on the country. Regarding sleep difficulties, a significant and positive correlation was found in the British sample (r=.24, p>.01), but non-significant in the Spanish (r=.12, p>.05). Negative experience was correlated with the item of interest in both samples: Spanish (r=.23, p<.01), and British (r=.28, p>.01). However, only a significant correlation was found between the item and positive experience: UK (r=-.20, p>.05), Spain (r=-.08, p>.05). Correlations found

between the item and satisfaction with life were non-significant: UK (r=-.15, p>.05), Spain (r=.05, p>.05). The same pattern was found with loneliness: UK (r=.15, p>.05), Spain (r=-.03, p>.05). Additionally, perceived social support did not show a significant correlation with the item of interest in the British sample (r=-.13, p>.05), but in Spain this correlation was significant and positive (r=.20, p<.01). Regarding trait anxiety a significant and positive correlation was found in UK (r=.22, p<.01), but non-significant in Spain (r=.12, p>.05). Anxiety state followed the same correlational pattern, the correlation being significant between the construct and the item in the British sample (r=.23, p<.05), but non-significant in the Spanish (r=.12, p>.05). Congruently with the results found for the previous hypotheses, H2a was not fully supported. Moreover, these findings indicate different correlations based on the country.

A longer usage of electronic devices in bed was correlated with more sleep difficulties, lower well-being levels, and higher anxiety levels in the British sample: sleep difficulties (r=.28, p<.01); positive experience (r=-.26, p<.01); negative experience (r=.22, p<.01); satisfaction with life (r=-.21, p<.01); loneliness (r=.24, p<.01); perceived social support (r=-.24, p<.01); trait anxiety (r=.25, p<.01); and state anxiety (r=.24, p<.01). H2b was fully supported for this sample.

In addition, in the Spanish sample a longer usage of electronic devices in bed was correlated with more sleep difficulties (r=.23, p<.01), negatively with positive experiences (r=-.28, p<.01), and positively with negative experiences (r=.26, p<.01). However, there was no correlation found with satisfaction with life (r=.02, p>.05), loneliness (r=.05, p>.05), and perceived social support (r=.12, p>.05). Finally, significant, and positive correlations were found between the item of interest and trait anxiety (r=.23, p<.01), as well as with state anxiety (r=.23, p<.01).

In summary, there are 45 associations above the diagonal (UK) and 45 below (Spanish). In the UK group only two are non-significant, and five in the Spanish group (three of these are observed across the bottom row). The other two non-significant associations are shared between both groups (PSQI & FOMO, MSPSS & FOMO). This means that 42 of the 45 associations are shared across the groups (40 as significant and 2 as non-significant). This shows a remarkable degree of similarity between the groups in how the cluster of constructs function in relation to each other, showing invariance in their relationships.

A simple way of comparing between the two groups with reference to the matrix is scanning the corresponding rows and columns for each group. For example, row 1 (UK) and column 1 (Spain) are directly comparable. The associations for sleep (PSQI) are a little stronger for the UK group, compared to the Spanish group, across the cluster of constructs. However, the same number are significant (8 of 9), and the direction of effect (positive or negative) is identical in each case. This demonstrates that sleep quality is an important construct across the two cultures and is systematically related to all the vital psychological constructs. It should be noted that with one exception, all associations are significant at $p < 0.01$ within this range. In contrast to this, night-time use of devices (NUD) shows fewer and generally weaker associations with the other variables in the Spanish group (cf. row 10 and column 10). Nevertheless, where there are significant effects (6 of 9 in the Spanish group), the directions of effect (positive and negative) are identical in both groups. Outcomes suggest that the effects of night-time use are maladaptive for both groups in relation to wellbeing, and that this is more accentuated in the UK group.

Satisfaction with life (SWL) is a robust construct in the matrix (cf. row 5 with column 5), with consistent and typically moderate to strong associations in both groups. Note that reading down the column for SWL 5 changes to reading across the row about halfway down - this kind of change over must be applied to both groups apart from in column 1 and row 1.

The associations are consistently and typically moderate to strong in both groups in adaptive directions (both positive and negative). These suggest that the construct is both important and influential as an indicator of wellbeing (although causality cannot be inferred from a cross-sectional study).

As a comparator with the positive construct, loneliness (UCLA) provides a reverse mirror image (positive and negative) to it. This can be observed by comparing rows 5 and 6 across, and columns 5 and 6 down (applying change over). Again, many of the coefficients for both groups range from moderate to strong and all are in the expected directions.

For social support (MSPSS), the patterns are again identical for both groups (positive and negative associations fully corresponding). Moreover, because this is seen as a positive construct, it mirrors the direction of the patterns shown by satisfaction with life, and contrasts with the direction of the patterns shown for loneliness.

Perhaps the two most robust constructs presented in the matrix are the state and trait anxiety measures (columns 8 & 9, rows 8 & 9). The associations here are generally moderate to strong. They fully correspond with each other in both groups and the directions of effect with all the other constructs are as expected. Given that the two anxiety measures are seen as negative constructs, their impact on the other variables is seen as maladaptive. It should also be noted that the trait and state aspects of anxiety mirror each other in relation to all the other constructs not only in direction but also in strength.

The positive and negative experience constructs (SpaneP and SpaneN) provide a useful test respectively for concurrent and divergent validity with the trait and state anxiety measures. As expected, the positive experience measure associates negatively and strongly with trait and state anxiety in both groups. In contrast, the negative experience measure associates positively with both anxiety measures, also in both groups.

The only construct left to comment on in the matrix in table 3 is fear of missing out (FOMO). The coefficients presented for this range from weak to moderate (0.10 to 0.38 in the Spanish group, and - 0.06 to 0.34 in the UK group); they are still predominantly significant in both groups: 6 of 9 for the Spanish, and 7 of 9 for the UK group. Furthermore, all associations are in the expected direction for a construct that may be seen as maladaptive to wellbeing (although it may also be motivational as may be the case more generally with fear).

Finally, with reference back to table 1, it was noted that normality and reliability were sound on all indicators. Also, tables 2 and 3 showed the similarities and differences between the associations across the two cultures. This same pattern can be seen in table 1. For example, the first four variables show means and standard deviations that are similar, but in the rest, there are mean differences, especially for UCLA and MSPSS, and Stai Trait and State. Variances are typically similar with a few exceptions (especially Stai State). Moreover, UK is lower in mean scores in the adaptive traits (e.g., SWL) and higher on the maladaptive traits (e.g., UCLA).

Table 4

Intercorrelations between separate items of night-time usage of electronic devices and the variables of interest disaggregated by country

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. 2hr	-	.48**	.51**	.35**	.19*	-.14	.14	.25**	-.14	.13	-.16*	.17*	.16
2. Dur2hr	.56**	-	.53**	.68**	.21**	-.13	.07	.09	-.14	.14	-.23**	.14	.11
3. BedU	.40**	.32**	-	.69**	.24**	-.20*	.28*	.28**	-.15	.15	-.13	.22**	.23**
4. DurB	.34**	.50**	.70**	-	.28**	-.26**	.22**	.20**	-.21**	.24**	-.24**	.25**	.24**
5. PSQI	.08	.18*	.12	.23**	-	-.47**	.53**	.15	-.55**	.53**	-.34**	.61**	.59**
6. SpaneP	.01	-.16*	-.08	-.21**	-.27**	-	-.68**	-.17*	.65**	-.65**	.58**	-.72**	-.77**
7. SpaneN	.16*	.19*	.23**	.26**	.50**	-.53**	-	.30**	-.57**	.60**	-.36**	.80**	.82**
8. FOMO	.17*	.21**	.13	.24**	.10	-.20*	.21**	-	-.25**	.32**	-.06	.34**	.27**
9. SWL	.10	-.11	.05	.02	-.28**	.66**	-.40**	-.08	-	-.66**	.57**	-.66**	-.665
10. UCLA	.04	.10	-.03	.05	.28**	-.60**	.46**	.17*	-.56**	-	-.65**	.73**	.68**
11. MSPSS	.03	.00	.20**	.12	-.19*	.47**	-.23**	-.05	.52**	-.69**	-	-.47**	-.47**
12. StaiT	.03	.12	.12	.23**	.43**	-.69**	.68**	.38**	-.56**	.65**	-.40**	-	.87**
13. StaiS	-.01	.12	.12	.23**	.42**	-.61**	.65**	.30**	-.54**	.57**	-.41**	.79**	-

Note. 2hr = electronic devices usage 2 hours before going to sleep; Dur2hr = duration of electronic devices usage in the 2 hours before going to sleep; BedU = electronic devices usage in bed; DurB = duration of electronic devices usage while already in bed. The results for the UK sample (n = 159) are shown above the diagonal. The results for the Spain sample (n = 172) are shown below the diagonal. *p ≤ 0.05, **p ≤ 0.01.

The associations presented between variables 5 to 13 in table 4 were previously described and interpreted under table 3. The new variables in the matrix for table 4 are 1 to 4 and all relate to digital usage before or during bedtime. Again, the columns and rows can be compared between UK students (above diagonal) and Spanish students (below diagonal). As might be expected, the correlations between the first four variables are positive and range from moderate to strong in the UK group (r's = 0.35 to 0.69, $p < .01$), and in the Spanish group (r's = 0.32 to 0.70, $p < .01$). The positive associations might suggest that individuals predisposed to one of these behaviours are also likely to be predisposed toward the others. However, the range between the correlations indicates diversity in students' engagement across the four indicators presented.

When the associations for the Spanish group are observed down the first four columns (from variable 5 onwards), most significant associations relate to DurB (duration of use in bed), with 6 of 9 significant. Where significant associations occur, the direction of effect appears to be maladaptive (both positive and negative). When the same cluster is compared in the UK sample, a similar and more consistent pattern is observed at row 4 (for DurB), with all associations significant and maladaptive patterns again evident.

With the UK group, BedU (use in bed), the maladaptive pattern mirrors DurB where significant associations occur (i.e., 6 of 9). In contrast, the Spanish group only exhibit 2 of 9 as statistically significant (column 3). Although these two associations show a maladaptive pattern (SpaneN & MSPSS), the lack of consistency across the associations in this column means that the two groups are not as comparable at this point as on other indicators. Also, in comparing the two groups on the 2hr variable (i.e., before going to sleep), there are more observable associations with the UK group (row 1, 4 of 9 significant), than with the Spanish

group (column 1, 2 of 9 significant). Finally, on variable 2 (Dur2hr), the associations are limited in both groups (2 of 9 statistically significant in the UK group and 4 of 9 significant in the Spanish group).

Regression Analysis

Multivariate linear regression analyses were calculated through SPSS 26.00. The SPSS Advanced Models module is necessary to run a linear regression with multiple dependent variables, to predict sleep difficulties, positive experience, negative experience, satisfaction with life, loneliness, perceived social support, trait anxiety, and state anxiety, based on night-time usage of electronic devices. Multivariate regression is conducted using the GLM-multivariate option, placing the dependent variables in the dependent box and the predictor variable in the covariate box (Multivariate Linear Regression in SPSS, 2020). The Multivariate Linear Regression Analysis adds value by reversing the approach used within the standard regression model where only one outcome variable is admitted. This alternative approach provides a spectrum of outcomes and allows direct comparison across one predictor toward all the outcomes simultaneously. Factors that can be compared include the regression weight in each linear relationship and easily traceable variance explained by the predictor. Although the multivariate linear regression is not commonly used in Psychology, some studies found in the literature used this model (Black et al., 2010; Começanha et al., 2017; Deeks et al., 2011). This model appears to have the benefits of a One Way MANOVA whilst relaxing some of the assumptions such as multicollinearity.

In order to run the linear regression analysis, assumptions were checked. Firstly, the scatterplot showed that there was linear relationship between the variables. Moreover, the scatterplot of standardised predicted values versus standardised residuals, showed that the

data met the assumptions of homogeneity of variance and linearity, and the residuals were approximately normally distributed.

Regression coefficients obtained through the multivariate linear regression analyses with one independent variable (night-time usage of electronic devices) and multiple dependent variables (sleep difficulties, positive experience, negative experience, satisfaction with life, loneliness, perceived social support, trait anxiety, and state anxiety) are presented in table 5. In the British sample, night-time usage of electronic devices was a significant predictor of sleep difficulties (β = .35, p<.01), positive experience (β = -.27, p<.01), negative experience (β = .29, p<.003), satisfaction with life (β = -.25, p<.01), loneliness (β = .24, p<.01), perceived social support (β = -.26, p<.01), trait anxiety (β = .29, p<.01), and state anxiety (β = .27, p<.01). The model was statistically significant, the predictor variable explained 22% of the variance in the outcome's variables, F (1, 153) = 4.63, p<.01. In the Spanish sample, as there were non-significant correlations between night-time usage of electronic devices and the variables: satisfaction with life, loneliness, and perceived social support, no regression analysis was conducted with these constructs. When regression analyses were conducted with the rest of the variables, night-time usage of electronic devices was found to be a significant predictor of sleep difficulties (β = .27, p<.01), positive experience (β = -.18, p<.01), negative experience (β = .29, p<.01), trait anxiety (β = .20, p<.01), and state anxiety (β = .19, p<.01). The model was statistically significant, the predictor variable explained 17% of the variance in the outcome's variables, F (1, 171) = 4.23, p<.01.

A simple linear regression was conducted to predict usage of electronic devices at night-time based on levels of FoMO. In the British sample a significant regression equation was found F (1, 157) = 13.89, p<.01 with an R^2 of .08. The predictor variable explained 8% of

the variance in the outcome variable. Moreover, in the Spanish sample a significant regression equation was found F (1, 170) = 11.18, $p<.01$ with an R^2 of .06.

Table 5 shows that more variance in night-time usage is explained in the UK sample (22%) than in the Spanish sample (17%), and this may be because more variables are operative in the UK sample. Also, the beta values are a little stronger generally in the UK sample although they are identical in the third variable (- 0.29, $p < .01$). In the UK sample, the variation between the coefficients ranges from 0.24 to 0.35, and from 0.18 to 0.29 in the Spanish sample. However, in both samples, the direction of effect (positive or negative) corresponds with each other and are in expected directions.

Table 5

Regression coefficients for night-time usage of electronic devices as predictor of sleep difficulties, positive and negative experience, satisfaction with life, loneliness, perceived social support, trait and state anxiety.

	Predictor Variable: Night-time usage of electronic devices					
	UK			Spain		
Outcomes Variables	B	SE B	β	B	SE B	B
SPANEP	-.24	.07	-.27**	-.16	.06	-.18**
SPANEN	.26	.07	.29**	.26	.06	.29**
SWL	-.31	.10	-.25**	-	-	-
UCLA	.53	.18	.24**	-	-	-
MSPSS	-.72	.21	-.26**	-	-	-
STAI-T	.63	.17	.29**	.44	.17	.20**
STAI-S	.70	.19	.27**	.40	.16	.19**
F (df)		4.63 (1, 153)**			4.23 (1, 171)**	
Adj. R^2		.22			.17	

Note. PSQI = Pittsburgh Sleep Quality Index; SPANEP = positive experience; SPANEN = negative experience; SWL = satisfaction with life; UCLA = loneliness; MSPSS = perceived social support; STAI-T = anxiety trait; STAI-S = anxiety state. *$p \leq 0.05$, **$p \leq 0.01$.*

Discussion

Research examining technology use and sleep difficulties has focused on addictive use of technology, such as internet and smartphone use (Luqman et al., 2020). However, to the best of the author's knowledge, there are no studies examining general electronic devices usage habits during night-time, FoMO, well-being and anxiety levels. Identifying factors that influence sleep (such as the electronic devices usage) and psychological constructs that predict this usage, such as FoMO, can help to develop targeted intervention programs. The present study identified a gap in this area of research knowledge by focusing on the associations between electronic devices usage at night-time, sleep difficulties, FoMO, well-being and anxiety.

This study has important implications for sleep and technology usage research. Findings are providing a psychological construct FoMO that acts as a predictor of electronic devices usage at night-time. Moreover, results revealed that this night-time usage of electronic devices is a predictor of lower well-being levels, higher sleep problems and anxiety. Therefore, pertaining to the contribution of this study to clinical practice in psychology, the results suggest the necessity to evaluate students' levels of FoMO and treat it through cognitive behaviour therapy if necessary (Gupta & Sharma, 2021). Another contribution of this study is the differences found between the two countries Spain and UK in the relationships between the variables of the study. There is a lack of cross-cultural studies examining the impact of the geographical location on the relation between FoMO and night-time usage of electronic devices, as well as between FoMO and problematic usage of SNS (Fioravanti et al., 2021). Therefore, cross-cultural studies are of key importance in this area of research because understanding sociocultural factors and the environment in which the usage takes place, can provide new resources to develop a more adaptive and responsible usage that

do not compromise well-being and mental health. Congruently with the results found and reported in the previous chapter of this thesis, the cultural differences found in this study are related to the relationships and predictions between electronic devices usage and well-being factors. However, regarding the predictor role of FoMO to electronic devices usage at night-time, congruent results were found in both countries. This finding supports the value of this relatively new construct, which remains relatively unknown to mental health professionals and clinicians.

This study has applied value in an area that has growing attention in the media, that is sleep hygiene. Features associated with this have included keeping the bedroom at an appropriate temperature, avoiding large meals late at night, especially protein because it is slow to digest, and minimising the admission of light to the bedroom. More recently attention has been given to the use of digital devices immediately before going to bed and whilst in bed (Orzech et al., 2016). It has been concluded that light from screens can counter the effects of melatonin to induce sleep (Cain & Gradisar, 2010). This study has also underlined fear of missing out as a cognitive factor that can add to the physiological factors in preventing sleep. This may mean that the psychological factors "switch on" after the devices have been switched off. As previously noted, many students report poor quality sleep (e.g., Adachi-Mejia et al.; Excelmans & Van den Bulck, 2016; Whipps et al., 2016), and this may have adverse knock-on for their wellbeing, quality of life and academic studies.

The present study has attempted to capture in more detail than previous work the outworking and implications of maladaptive habits for wellbeing and mental health outcomes (with possible implications for day-to-day functioning in the academic context) (Hershner & Chervin, 2014). The consistent patterns that have emerged across positive and negative constructs strongly accentuate the potential breadth of sleep quality impairment on individuals. Of course the use of digital devices may not be the only factor at play in such

processes but the patterns observed here may be an indicator of their unique importance. It should also be noted that all four indicators of digital device night-time use were implicated maladaptively in student wellbeing.

This study can be linked with previous work through the use of the validated PSQI measure as an indicator of sleep-related problems. Added value from the present study is attention to four behavioural indicators, presented in table 3, to tease out in more detail combined and unique effects across the constructs.

A growing trend in study guides is the inclusion of a section or chapter on wellbeing and mental health and on physical wellbeing related to diet, exercise and work-life balance (e.g., McMillan, 2021). However, this most recent edition of this study guide only provides a brief mention of sleep, although it gives attention to wellbeing, stress, exercise, mental health and includes mindfulness and growth mindset. Findings from the present study indicate that sleep quality and sleep hygiene should be included and emphasised as an essential part to help students maximise the quality of the student experience.

Despite that this study has added to previous research, limitations should be considered. Firstly, inferences about causality or directions of relations cannot be made due to the cross-sectional nature of this study. In addition, the use of self-report measures provides the limitation of a proneness to respond in a socially desirable manner. These concerns can be counter-balanced, however, by the validity statistics presented, and by the relationships found in the expected directions (both positive and negative). Future research could apply more complex statistic methods such as SEM, which provides an approach for thinking about a causal structure that could be empirically tested in future studies. Furthermore, future studies could examine how the social orientation tendency, which includes three types of social orientation: prosocial, individualist, and competitor (Lewis & Willer, 2017), affects the relationship between use of FoMO and electronic devices usage.

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General Discussion

Technology and SNS are an important part in modern society. A large number of existing studies in the literature have found relationships between SNS usage and detriments of well-being (Verduyn et al., 2017). However, results are contradictory and there are also studies that found positive associations between SNS usage and well-being (Mackson et al., 2019). This context of inconsistency highlights the pathway to progress in an area of growing practical and theoretical significance. Given that contemporary students are digital natives and therefore are likely to have high levels of digital literacy, there will an ongoing need to examine and re-examine what is likely to be an evolving landscape in the future of education.

There are several reasons why the researcher found a lack of consensus in the literature. Firstly, most of the studies focused on one SNS platform, and that was primarily Facebook. This implies a lack in this area of research based on the data that shows Facebook has been receding as a usable platform recently. Furthermore, individuals use a wide variety of platforms nowadays (such as Instagram, or applications such as WhatsApp). Secondly, although it is important that research examines addictive behaviour in SNS, most of the time, the common usage that individuals practise daily is forgotten in research and not examined properly.

More studies are needed that capture common, daily digital usage, that focus not only on addictive and dependent behaviours, but also on issues related to wellbeing, anxiety, and mental health. This project does not underestimate the positive role of technology with the many advantages it has brought to individuals, to industry, commerce, health, education, communication etc. However, the burgeoning growth of technology has brought many new challenges in the sphere of education, for example with students needing to learn to self-regulate their digital behaviours. This research has also emphasised social comparison as an

important mediator between technology use and wellbeing. This demonstrates a vitally important point: Psychology offers many "readymade" constructs that are relevant to finding the optimal use for technology as challenges in this sphere continue to accumulate. The constructs used in this study such as social comparison and anxiety illustrate the point. Therefore, the challenge for further research is to continue to monitor and apply the most appropriate constructs for developing the research in a constantly changing landscape. Another factor in the present study was that technology-related content was adapted to established constructs in the form of new items. These were validated within the study and this may also point the way for future research. In the cases where psychological constructs are too broad and general, it may be necessary to develop more specific constructs under the shadow of the more general measure so that they become more proximal than distal.

Thirdly, to illustrate the above point with an example, while some constructs have been already established as mediators in the relationship between SNS usage and mental health, such as social comparison, there is no specific measure developed in the social comparison related to SNS. Therefore, new measures needed to be developed in well-being, anxiety, and social comparison in the specific context of technology usage and SNS. It is important that these measures are adapted to typical users, and more specifically to the most avid users, who are young people. In order for measures to remain relevant over time, they need to be focused on SNS platforms in general, so that when a specific platform is obsolete the measure can still be applied. Furthermore, because SNS connect people worldwide, the measures need to be applied to different cultures, and therefore, the thesis focused on three different countries. In addition, another rationale to focus on different countries was to increase the knowledge in this area of research, as well as to examine differences based on the culture. Cross-cultural studies in this area of research are important to fill this gap in the literature as technology and SNS use could impact differentially on well-being due to cultural

diversity (Lee et al., 2016). Cross-cultural differences have been found more generally in factors such as individual versus collective values and in issues such as extraversion versus introversion. Although psychological constructs may remain similar across culture (as this study has shown through invariance testing), the values that different cultures place upon different components may vary – e.g., individual versus collective. In the current study we found that there were both commonalities and differences in the way the constructs related to each other at the structural level (even when similar at the measurement level).

Finally, the last study of this thesis drew its rationale from the lack of research examining technology use and sleep difficulties in typical users (Luqman et al., 2020). Moreover, to the best of the researcher's knowledge, there are no studies examining general electronic devices usage habits during night-time, FoMO, well-being and anxiety levels. The challenge for students is to self-regulate their SNS use in a way that facilities good sleep hygiene in factors such as not using the technology for long periods before bedtime or disturbing their sleep to check their devices through fear of missing out. For students the ongoing impact of sleep deprivation may mean missing learning sessions or not benefitting fully from them. For academics and student counsellors, it is important that they remind students of the repercussions of sleep deprivation resulting from excessive or untimely SNS use. On the one hand, technology use can contribute to strengthening communication and the academic community, but on the other it can disturb the diurnal cycle with all the negative outcomes that can stem from that. Given the paucity of research in this area, this study helps to remedy this omission and gives a strong point for this to be included as an essential in future research, and to be included in outputs such as student study guides.

Findings from this thesis suggest that the measures assessing well-being perceptions, anxiety perceptions and social comparison in relation to technology and SNS usage, show good evidence of internal consistency and can be used with confidence in the three countries

covered in this study (ΔCFI < .010 and/or a difference of ΔRMSEA < .015) (Chen, 2007). All the measures went through the rigorous process of backward translation and the levels of invariance reported show a good amount of consistency, although some differences might be expected (e.g., attributable to cultural norms/values as noted above).

With respect to the results found in the structural models, findings suggest that social comparison as a construct specifically related to SNS usage seems to mediate the relationships between perceptions of anxiety (in the social factor of the bifactorial scale) and well-being, satisfaction with life, loneliness, and trait anxiety. When mediating the relationships between different SNS types and well-being and anxiety perceptions, it seems that the mediating role of social comparison is of relevance for Instagram, and not for Facebook. Finally, another important finding is the effect of SNS activities to well-being and anxiety perceptions cognitive (not the social factor). This result indicates that participants who engage more in SNS activities, perceive less cognitive anxiety related to electronic devices and SNS usage. In addition, the engagement on SNS activities seems to be associated positively with well-being perceptions positive and well-being perceptions negative in the Turkish and British samples. However, SNS activities are related negatively with positive perceptions of well-being related to electronic devices and SNS usage in the Spanish sample.

When the relationships between SNS types and well-being perceptions were examined, results indicated that only Instagram was related to well-being perceptions. Moreover, Instagram had an indirect effect on well-being mediated by social comparison.

Furthermore, although findings suggest no direct effect from SNS types to anxiety perceptions, interesting indirect effects were found. In the British sample there was an indirect effect of Instagram mediated by social comparison for both factors of anxiety perceptions, the cognitive and the social. This was not the case for the SNS platform

Facebook, and WhatsApp was only significant for the indirect effect to the social factor of anxiety perceptions. In the Turkish sample, only Instagram showed indirect effects, mediated by social comparison, to anxiety perceptions cognitive and social factors. This finding is important because it demonstrated the importance of evaluating the different SNS platforms and not assuming they are one entity. While previous research focused mostly on Facebook, this thesis is suggesting that Instagram influences well-being and anxiety, at least at the level of perceptions. Also, this study has accentuated the role of indirect effects as they can completely or partially mediate predictor variables and may add incremental variance to them. This has given added value to this study by comparing indirect effects across culture.

Finally, findings from the last study of this thesis, suggest that the psychological construct FoMO (Fear of Missing Out) acts as a predictor of electronic devices usage at night-time. Moreover, results revealed that this night-time usage of electronic devices is a predictor of lower well-being levels, higher sleep problems and anxiety. Concretely, in the British sample, night-time usage of electronic devices was a significant predictor of sleep difficulties, positive experience, negative experience, satisfaction with life, loneliness, perceived social support, trait anxiety, and state anxiety. Furthermore, in the Spanish sample, night-time usage of electronic devices was found to be a significant predictor of sleep difficulties, positive experience, negative experience, trait anxiety, and state anxiety. These findings contribute to research and may have implications for clinical practice or counselling in psychology, as the results highlight the necessity to evaluate students' levels of FoMO (Gupta & Sharma, 2021). This research recognises the value of adaptive technology use, not least because of the limitations imposed by the pandemic. However, this must be weighed against the problems that can emerge such as social comparison, negative perceptions of well-being, anxiety, and sleep difficulties. Therefore, this thesis has contributed with new measures that can be applied in the evaluation of some of these constructs. Moreover, the thesis has highlighted the

importance of the construct of FoMO, and the night-time usage of technology, with its effects on well-being, anxiety, and sleep. To conclude, this thesis has provided new approaches to make an adaptive use of technology. This is important in a technology-driven world, and specially in times as lived recently with the reductions of in-person interactions due to the global health crisis.

A strength of this thesis is that is embedded within the context of several theoretical perspectives. For example, Social Comparison Theory (Festinger, 1958), is an old theory that has enduring value, as comparisons with others is a timeless phenomenon. The direction of comparison (positive or negative) may be respectively adaptive or maladaptive. In this study, that old theory has been used effectively with a recent and growing practice (burgeoning growth in digital technologies). The consistent meditational role of SCT in the present findings demonstrates the continuing relevance and adaptability of the theory. Future research might look at comparisons that are not only positive and negative (above and below others) but also others that are seen as the same as the observer, with the question, "Is positive and adaptive just to be the same as your peers?"

A second theoretical perspective is the Self-Determination Theory (Deci & Ryan, 1985). This theory captures the words within the acronym "CAR" - Competence, Autonomy and Relatedness. Participants in SNS platforms may feel confident in their Competence to use the platforms (e.g., responding with wit and using multimedia to communicate). They may also feel quite independent in expressing their individuality and in putting their own unique brand (e.g., humour) on what they do - i.e., Autonomy. Perhaps the real strength of this theoretical model is in Relatedness as this gives users such as students the opportunity to connect with others and feel a sense of community and belonging as part of the in-group. In contrast they may be left feeling excluded and isolated. This study has embraced these aspects of the model with attention to loneliness and social support.

The third theory that resonates with this study is the Interpersonal Connection Behaviours Framework (Clark et al., 2018). As implied by the name, repeated behaviours that link individuals through dynamic and repeated interpersonal activities may lead to connectivity and relatedness. However, through SNS usage this may work in a contrary direction in a way that might compromise an individual's wellbeing so that they do not find fulfilment for their social needs through acceptance and belonging. Their SNS usage may thus impair the quality of their personal wellbeing. In contrast, a well-regulated and sensibly balanced use of SNS may be a contributing factor in optimising student wellbeing. Moreover, during the pandemic this was an essential outlet for students.

These theoretical perspectives provided a good foundation for the current research in terms of both positive and negative outcomes. For example, based on the Self Determination Theory conceptual framework, loneliness blended in as the opposite of relatedness (Chen et al., 2021). In the same vein, social support naturally weaves into these theoretical frameworks as it is seen as adaptive to wellbeing and a buffer for negative outcomes. The other constructs in this study include the fear of missing out and this might be seen as a dynamic motivator for social engagement through the media of SNS. As a qualification to this, over engagement in SNS may lead to sleep deprivation (e.g., through the fear of missing out) and this may have unintended consequences for wellbeing. Therefore, the constructs used in this study can be traced to theoretical underpinnings, both directly and indirectly, either positively or negatively.

Despite the contributions of this thesis, limitations should be noted. The studies are cross-sectional, and causality cannot be established. Longitudinal and experimental studies are required in future studies to further investigate the relationships between the constructs of the study. Furthermore, future research should examine how the self-concept in the online world, impacts well-being and mental health. To the best of the researcher's knowledge there

are no measures of digital self-concept and is an important part of individuals' everyday life. By drawing attention to the impact of technology, and especially SNS usage in relation to students' wellbeing, this research has signposted many of the psychological constructs that should be carried forward to enrich the research and to keep up to speed with expanding practice.

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Appendix A

Survey for Pilot Study

PIS

LIVERPOOL JOHN MOORES UNIVERSITY
PARTICIPANT INFORMATION SHEET

Technology use: Implications for subjective well-being and mental health.

Vanessa Caba Machado: Natural Sciences and Psychology

You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

1.   **What is the purpose of the study?**

The purpose of the current investigation is to examine the relationships between technology use, anxiety and well-being. The investigation also aims to understand the processes (constant connection with people, amount of information, etc) underlying those relationships in university' students.

2.   **Do I have to take part?**

No. It is up to you to decide whether or not to take part. If you do you will be given this information sheet. You are still free to withdraw at any time and without giving a reason. A decision to withdraw will not affect your rights.

3.   **What will happen to me if I take part?**

If you consent to taking part in this research, you will be asked to complete an online survey. The survey includes questions about several technological devices usage, and use of applications and social networks. The survey also investigates various aspects of your lifestyle in relation with the use of technology, such as; your well-being, and perceived anxiety. Basic demographic information will also be collected. You will also be invited to

take part in a group discussion that will take place in the university to discuss about the quality and content of the questionnaire to help us to make improvements.

4.   Who can participate?

You are eligible to take part if you are an university student aged 18 or older. Both users and non-users of several digital technologies, new applications and social networks such as Instagram and Facebook are welcome to participate.

5.   Are there any risks / benefits involved?

There are no intended benefits associated with taking part in this research. However, findings may help researchers to understand how technology use is associated with important aspects in our lives. There are no overt risks associated with completing this survey.

6.   Will my taking part in the study be kept confidential?

Any information you provide will be kept strictly confidential. We ask you to include your university email address in the questionnaire. The reason for including your email address on the questionnaire is so that, as mentioned previously, we can invite you to participate to the group discussion that will take place in the university to provide your opinion in regards to the quality of the questionnaire so we can make improvements. The personal information you provide on the questionnaire will be kept confidential and we will not use your email address for any other reason. However, if you do not want to provide your email address but you still want to participate in the group discussion you can contact the researcher. The demographic information you provide (e.g. age, sex) will not be used to identify you, nor will it be passed on to a third party. This information will be used solely for the purpose of data analysis and to understand what kind of people have taken part. All data will be kept by the researchers for a minimum of 5 years before it is destroyed. If you want to withdraw from this study after completion of the survey, or you have any general queries, then please contact the researchers:

This study has received ethical approval from LJMU's Research Ethics Committee (17/NSP/028, 13/04/2017)

Contact Details of Researcher – Vanessa Caba Machado   V.CabaMachado@2015.ljmu.ac.uk

Contact Details of Director of Study– Dr David McIlroy   D.McIlroy@ljmu.ac.uk

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

I have read the information sheet provided and I am happy to participate. I understand that by completing and submitting this online questionnaire I am consenting to be part of this research study and for my data to be used as described in the information sheet provided.

○ I agree

About you

Gender What gender do you identify with?

○ Male

○ Female

○ Other

○ Prefer not to say

How old are you? (years)

_____

What is your nationality?

_____

What is your current level of study?

○ Level 3 (Foundation)

○ Level 4 (1st year undergraduate)

○ Level 5 (2nd year undergraduate)

○ Level 6 (3rd year undergraduate)

○ Level 7 (PGCERT, PGDIP, Masters)

○ Level 8 (PhD or professional doctorate)

What is your current student status?

○ Full-time student

○ Part-time student

What is your field of study?

_____

Do you have paid employment?

○ Yes

○ No

How many hours per week do you work while you study?

_____

During term time, where do you reside?

☐   Student accommodation / halls of residence

☐   Privately rented accommodation

☐   With parents / guardian

☐   Other

Please estimate as accurately as possible your gross annual income, including employment income and student loans and bursaries.

_____

GENERAL TECHNOLOGY USAGE

The survey will now ask some questions about general technology usage. Please indicate how often you use each of these devices each day. Please consider all uses except listening to music. For example, consider calling, texting, Facebook, e-mail, sending photos, gaming, surfing the internet, watching videos, and all other uses driven by 'apps' and 'software'.

Mobile phone

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Laptop

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Desktop computer

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Tablet

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Ipad

◯ Never

◯ Once a month

◯ Several times a month

◯ Once a week

◯ Several times a week

◯ Once a day

◯ Several times a day

◯ Once an hour

◯ Several times an hour

◯ All the time

Please indicate how often you do each of the following activities on any device (mobile phone, laptop, desktop, tablet etc.)

Check your e-mail.

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Search the internet

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Check your social networks page

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Browse other persons' profiles

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Update your status

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Comment on someone else's content

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Click "Like" on someone else's content

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Play games

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Texting

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Make calls

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Receive calls

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Please indicate how often you use each of the following social networks and applications

Facebook

- ◯ Never

- ◯ Once a month

- ◯ Several times a month

- ◯ Once a week

- ◯ Several times a week

- ◯ Once a day

- ◯ Several times a day

- ◯ Once an hour

- ◯ Several times an hour

- ◯ All the time

Instagram

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Tumblr

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Twitter

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Snapchat

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Whatsapp

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Youtube

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Vine

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Google+

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Educational apps

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Other apps

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Please select a response to indicate how much you agree or disagree with each statement.

Anx1 Spending too much time using any electronic device (mobile phone, laptop, desktop, etc.) will make me feel anxious.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx2 I get anxious during a task if I get distracted by electronic devices.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx3 Seeing lots of different news and information online adds to my anxiety.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx4 Seeing unknown people's profiles through social networks makes me feel anxious.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx5 Seeing known people's profiles through social networks makes me feel anxious.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx6 Being connected at all time with people make me feel anxious.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx7   Receiving messages of people through different social networks adds to my anxiety.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Anx8   Receiving messages of people through my electronic devices adds to my anxiety.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

---

well1 When I use social networks I feel less isolated.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

---

well2 Social networks make me feel happier.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

---

well3 Spending time on internet or social networks make me feel depressed.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

well4 Spending time using any device will help me to find the meaning and purpose in my life.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

well5 Spending time using social networks will help me to find the meaning and purpose in my life.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

well6 Using social networks makes me feel confident and good about myself.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

---

well7 Using any electronic device makes me feel confident and good about myself.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

---

well8 Using social networks makes me feel less satisfied with my life.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

well9 Using any electronic device makes me feel less satisfied with my life.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

well10 Social networks are a real source of comfort to me.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Social1 Social networks induce me to compare myself with others with respect to what I have accomplished in life.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Social2 People on social networks seem to have better lives than me.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Social3 Social networks sites provide a situation where users constantly compare themselves with others.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Social4 Browsing other people's social network profiles creates a pressure to have a perfect body.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

Social5 Social networks induce me to compare how I am doing socially (e.g. social skills, popularity) with other people.

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

We would like to invite you to take part in a group discussion that will take place in the university to discuss about the quality and content of the questionnaire to help us to make improvements. Please leave your email address in the box below so the researcher can contact you for this reason.

_____

However, if you do not want to provide your email address here but you still want to participate in the group discussion, please contact Vanessa Caba at the following email address;

V.CabaMachado@2015.ljmu.ac.uk

Page Break

LIVERPOOL JOHN MOORES UNIVERSITY

Debriefing sheet

Please read the information below about this study, then press the ">>" bottom of this page to submit your responses.

Thank you for participating in this study. Please feel free to contact the researcher using the details below if you have any further questions.

This study was an investigation into the relationships between technology use, anxiety and well-being. The investigation also aimed to understand the processes (constant connection with people, overload of information and social comparison) underlying those relationships.

An online survey was completed. The survey included questions about several technological devices, applications and social networks usage. The survey also assessed your perceptions about well-being, anxiety and the experience of some processes in relation with the use of technology.

THANK YOU AGAIN FOR YOUR PARTICIPATION

Study Researcher: Vanessa Caba Machado   Email: V.CabaMachado@2015.ljmu.ac.ukStudy Supervisor: Dr David McIlroy   Email: D.McIlroy@ljmu.ac.uk

Appendix B

Focus Group: Discussion Guide

Welcome and thank you for volunteering to take part in this focus group. You have been asked to participate as your point of view is important. I am aware that you are busy and I appreciate your time.

Introduction: this focus group discussion is designed to assess your current thoughts and feelings about technology use and its relationship with anxiety, and well-being. Moreover, the aim of this focus group discussion is to assess the quality and content of the survey to help us to make improvements. May I record the discussion to facilitate its recollection?

Anonymity: despite being audio recorded, I would like to assure you that the discussion will be anonymous. Any information you provide will remain strictly confidential.

Important thing to remember is that there's obviously no right or wrong answers to any of my questions or anything that we say. It's really just about your own views.

- Does anyone have any questions?

- OK, let's begin.

Warm up

First, I would like everyone to introduce themselves. Can you tell us your name?

Introductory question

I am just going to give you a couple of minutes to think about your experience when using digital technologies and any impact of this use in your perceived social support, satisfaction with life, depression, loneliness, positive and negative mood and perceived stress or anxiety (Write this on blackboard). Is anyone happy to share his or her experience?

Guiding questions

- What factors do you think that make digital technologies harmful to well-being?

- What factors do you think that make SNS harmful to well-being?

- Why do you think that digital technologies' use can elicit anxiety/stress responses?

• Why do you think that SNS's use can elicit anxiety/stress responses?

• Do you prefer to just browse through other people's materials? What kind of feelings do you have while you are browsing other people's materials?

• How do you feel when you upload your own materials?

• Do you worry after posting something? If this happens to you can you share why did you feel worry or regret after it?

• How do you feel when you post something on facebook that you know that others will like?

• What is your general perception about sense of belongingness while using any social network? do you feel part of something really important?

• How do you think that expressing negativity on social networks sites affects to our well-being and anxiety? How about expressing positive things?

Discussion about the survey

Let's talk now about the survey that you filled out time ago. I would like you to fill it again in order to know your thoughts about what you liked about it and what you didn't like, ways we can change it. (Provide the printed survey to the participants)

• What are your thoughts on the format?

- What are your thoughts on the content?

- Is there anything that you would exclude?

- Is there anything you feel should be included and is not?

- Was the language easy to understand?

Concluding question about the survey

Of all the things we have discussed about the survey, what would you say are the most important issues you would like to express about it?

Finishing…

That is great. That is pretty much comes to the end of the time we have. So, I would just first of all like to say thank you very much, everybody, for coming. I hope you have enjoyed it. It has certainly been useful. And just to reassure you again that the recordings are totally confidential. So, appreciate your input and your contribution. Thanks you!

Appendix C

Panel of Experts

The measure presented will inform about non adaptive patterns of technology use in the typical individual, which will help to develop tailored interventions or encouragement for adaptive technology usage.

Specifically, the measure presented aims to capture individual's perceptions about how technology use associates with well-being and anxiety. Moreover, it aims to capture the factors/processes (e.g. media multitasking, internalized pressure to maintain a constant connection with people, general communication or information overload) that are mediating the relationship between technology usage and the constructs of interest.

We would like to ask you to review the test specifications and the selection of items with their response categories to improve the content validity of the questionnaire. Firstly, the objective of each block of items is presented, we would like that you read this to understand the purpose of the questions. Secondly, items will be presented with their response category. Please, rate each item based on relevance, clarity, simplicity and ambiguity on the five-point likert scale provided.

Please tick appropriate response below.

1.   1. Relevance

1 = not relevant
2 = of little relevance
3 =moderately relevant
4 = relevant
5= very relevant

2. Clarity

1 = not clear
2 = of little clarity
3 =moderately clear
4 = clear
5= very clear

3. Simplicity

1 = not simple
2 = of little simplicity
3 =moderately simple
4 = simple
5= very simple

4. Ambiguity

1 = not ambiguous
2 = of little ambiguity
3 =moderately ambiguous
4 = ambiguous
5= very ambiguous

Appendix D

Cross-cultural Study: Survey UK

LIVERPOOL JOHN MOORES UNIVERSITY
PARTICIPANT INFORMATION SHEET
Title of project: Technology use: Implications for subjective well-being,
anxiety and mental health.

Name of Researcher and School/Faculty Vanessa Caba Machado, Natural Sciences and Psychology   You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

1.   What is the purpose of the study?
  The purpose of the current investigation is to examine the relationships between technology use, anxiety and well-being. The investigation also aims to understand the processes (constant connection with people, amount of information, etc) underlying those relationships in university' students.

2.   Do I have to take part?
   No. It is up to you to decide whether or not to take part. If you do you will be given this information sheet. By completing the questionnaire you are agreeing to take part. The survey will take 30-40 minutes to complete. You are still free to withdraw at any time and without giving a reason. However, after the data collection has ended, your data could be removed from the study if you provide your email address for the follow-up survey. But if you do not provide your email address, data could not be removed once it has been collected. A decision to withdraw will not affect your rights.

3.   What will happen to me if I take part?
  If you consent to taking part in this research, you will be asked to complete an online survey. The survey includes questions about several technological devices usage (tablet, laptop, mobile phones, desktop computers, IPad, etc.), applications (e.g. WhatsApp) and social networks (Facebook, Instagram, etc.). The survey also investigates various aspects of your lifestyle in relation with the use of technology, such as: your well-being, and perceived anxiety. Basic demographic information will also be collected.

4.   Who can participate?
  You are eligible to take part if you are a university student aged 18 or older. Both users and non-users of several digital technologies (tablet, laptop, mobile phones, desktop computers, IPad, etc.), applications (e.g. WhatsApp) and social networks such as Instagram and Facebook are welcome to participate.

5.   Are there any risks / benefits involved?
  There are no intended benefits associated with taking part in this research. However, findings

may help researchers to understand how technology use is associated with important aspects in our lives. There are no overt risks associated with completing this survey.

6. Will my taking part in the study be kept confidential?

Any information you provide will be kept strictly confidential. The demographic information you provide (e.g. age, sex) will not be used to identify you, nor will it be passed on to a third party. This information will be used solely for the purpose of data analysis and to understand what kind of people have taken part. All data will be kept by the researchers for a minimum of 5 years before it is destroyed. If you want to withdraw from this study after completion of the survey, or you have any general queries, then please contact the researchers:

Contact Details of Researcher - Vanessa Caba Machado **V.CabaMachado@2015.ljmu.ac.uk**
Contact Details of Director of Study– Dr David McIlroy **D.McIlroy@ljmu.ac.uk   This study has received ethical approval from LJMU's Research Ethics: 18/NSP/026   If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.**

I have read the information sheet provided and I am happy to participate. I understand that by completing and submitting this online questionnaire I am consenting to be part of this research study and for my data to be used as described in the information sheet provided.

○ I agree

About you

What gender do you identify with?

○ Male

○ Female

○ Other

○ Prefer not to say

How old are you? (years)

_____

What is your nationality?

_____

What is your current level of study?

○ Level 3 (Foundation)

○ Level 4 (1st year undergraduate)

○ Level 5 (2nd year undergraduate)

○ Level 6 (3rd year undergraduate)

○ Level 7 (PGCERT, PGDIP, Masters)

○ Level 8 (PhD or professional doctorate)

What is your current student status?

◯ Full-time student

◯ Part-time student

What is your field of study?

_____

Do you have paid employment?

◯ Yes

◯ No

How many hours per week do you work while you study?

_____

During term time, where do you reside?

☐   Student accommodation / halls of residence

☐   Privately rented accommodation

☐   With parents / guardian

☐   Other

Please estimate as accurately as possible your gross annual income, including employment income and student loans and bursaries.

_____

GENERAL TECHNOLOGY USAGE

The survey will now ask some questions about general technology usage. Please indicate how often you use each of these devices each day. Please consider all uses except listening to music. For example, consider calling, texting, Facebook, e-mail, sending photos, gaming, surfing the internet, watching videos, and all other uses driven by 'apps' and 'software'.

Mobile phone

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Laptop

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Desktop computer

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Tablet

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Ipad

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Please indicate how often you do each of the following activities on any device (mobile phone, laptop, desktop, tablet etc.)

Check your e-mail.

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Search the internet

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Check your social networks page

- ◯ Never

- ◯ Once a month

- ◯ Several times a month

- ◯ Once a week

- ◯ Several times a week

- ◯ Once a day

- ◯ Several times a day

- ◯ Once an hour

- ◯ Several times an hour

- ◯ All the time

Browse other persons' profiles

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Update your status

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Comment on someone else's content

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Click "Like" on someone else's content

◯ Never

◯ Once a month

◯ Several times a month

◯ Once a week

◯ Several times a week

◯ Once a day

◯ Several times a day

◯ Once an hour

◯ Several times an hour

◯ All the time

Play games

◯ Never

◯ Once a month

◯ Several times a month

◯ Once a week

◯ Several times a week

◯ Once a day

◯ Several times a day

◯ Once an hour

◯ Several times an hour

◯ All the time

Texting

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Make calls

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Receive calls

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Please indicate how often you use each of the following social networks and applications

---

Facebook

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Instagram

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Tumblr

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Twitter

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Snapchat

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Whatsapp

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Youtube

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Vine

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Google+

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Educational apps

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Other apps

○ Never

○ Once a month

○ Several times a month

○ Once a week

○ Several times a week

○ Once a day

○ Several times a day

○ Once an hour

○ Several times an hour

○ All the time

Please select a response to indicate how much you agree or disagree with each statement.

Spending too much time using any electronic device (mobile phone, laptop, desktop, etc.) will make me feel anxious.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

I get anxious during an academic task if I get distracted by electronic devices.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Seeing lots of different news and information online initiates feelings of anxiety in me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Being connected at all time with people makes me feel anxious.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Receiving messages of people through different social networks initiates feelings of anxiety in me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Receiving messages of people through my electronic devices initiates feelings of anxiety in me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

I feel controlled by my electronic devices.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

I feel a pressure to answer messages immediately.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

My attempt to relieve academic anxiety by turning to technology use does not work for me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

I worry about what I post (writing, pictures, videos, etc) on social networks.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Waiting for answers to my messages makes me feel anxious.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Receiving information that I do not want through social networks, makes me feel anxious.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

When I use social networks I feel less isolated.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

After using social networks I feel happier.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Spending time on internet or social networks depresses my mood.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Spending time using any device adds to my quality of life.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Spending time using social networks adds to my quality of life.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Using social networks makes me feel satisfied with myself.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Using any electronic device makes me feel satisfied with myself.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Using social networks makes me feel less satisfied with my life.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Using any electronic device makes me feel less satisfied with my life.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Social networks are a real source of comfort to me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

When on social networks I compare my accomplishments with those of others.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

People I see on social networks seem to have better lives than me.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

On social networks sites users constantly compare themselves with others.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Browsing other people's social network profiles creates a pressure on me to have a perfect profile.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

On social networks I compare how I am doing socially (e.g. social skills, popularity) with other people.

○ Very Strongly Agree

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

○ Very Strongly Disagree

Below are five statements that you may agree or disagree with. Indicate your agreement with each item. Please be open and honest in your responding.

In most ways my life is close to my ideal.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

The conditions of my life are excellent.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

I am satisfied with my life.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

So far I have gotten the important things I want in life.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

If I could live my life over, I would change almost nothing.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

Page Break

Indicate how often each of the statements below is descriptive of you.

How often do you feel that you are "in tune" with the people around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you lack companionship?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there is no one you can turn to?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel alone?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel part of a group of friends?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you have a lot in common with the people around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you are no longer close to anyone?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that your interests and ideas are not shared by those around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel outgoing and friendly?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel close to people?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel left out?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel that your relationships with others are not meaningful?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel that no one really knows you well?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel isolated from others?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel you can find companionship when you want it?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there are people who really understand you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel shy?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that people are around you but not with you?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel that there are people you can talk to?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

How often do you feel that there are people you can turn to?

◯ I never feel this way

◯ I rarely feel this way

◯ I sometimes feel this way

◯ I often feel this way

Page Break

Please think about what you have been doing and experiencing during the past four weeks. Then report how much you experienced each of the following feelings, using the scale below.

Positive

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Negative

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Good

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Bad

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Pleasant

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Unpleasant

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Happy

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Sad

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Afraid

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Joyful

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Angry

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Contented

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Page Break

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

There is a special person who is around when I am in need.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

There is a special person with whom I can share joys and sorrows.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My family really tries to help me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I get the emotional help and support I need from my family.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I have a special person who is a real source of comfort to me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My friends really try to help me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can count on my friends when things go wrong.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can talk about my problems with my family.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I have friends with whom I can share my joys and sorrows.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

There is a special person in my life who cares about my feelings.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My family is willing to help me make decisions.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can talk about my problems with my friends.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

Page Break

A number of statements which people have used to describe themselves are given below. Read each statement and choose the most appropriate answer below the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

I feel pleasant.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I tire quickly.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I feel like crying.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I wish I could be happy as others seem to be.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I am loosing out on things because I can't make up my mind soon enough.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I feel rested.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I am calm, cool and collected.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I feel that difficulties are pilling up so that I cannot overcome them.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I worry too much over something that really doesn't matter.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I am happy.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I am inclined to take things hard.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I lack self-confident.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I feel secure

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I try to avoid facing a crisis or difficulty.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I feel blue/depressed.

- ○ Almost Never

- ○ Sometimes

- ○ Often

- ○ Almost Always

I am content.

- ○ Almost Never

- ○ Sometimes

- ○ Often

- ○ Almost Always

Some unimportant thought runs through my mind and bothers me.

- ○ Almost Never

- ○ Sometimes

- ○ Often

- ○ Almost Always

I take disappointments so keenly that I can't put them out of my mind.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I am a steady person.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

I get in a state of tension or turmoil as I think over my recent concerns and interests.

○ Almost Never

○ Sometimes

○ Often

○ Almost Always

Page Break

A number of statements which people have used to describe themselves are given below. Read each statement and choose the most appropriate answer below the statement to indicate <u>how you feel right now, at this moment</u>. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

I feel calm.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

I am tense.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

I feel upset.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

I am relaxed.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

I feel content.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

I am worried.

○ Not at all

○ Somewhat

○ Moderately

○ Very much

LIVERPOOL JOHN MOORES UNIVERSITY

Debriefing sheet

Please read the information below about this study, then press the ">>" bottom of this page to submit your responses.

Thank you for participating in this study. Please feel free to contact the researcher using the details below if you have any further questions.

 This study was an investigation into the relationships between technology use, anxiety, and well-being. The investigation also aimed to understand the processes (constant connection with people, overload of information and social comparison) underlying those relationships.

 An online survey was completed. The survey included questions about several technological devices, applications and social networks usage. The survey also assessed your perceptions about well-being, anxiety and the experience of some processes in relation with the use of technology. Finally, levels of anxiety and well-being were assessed.

 THANK YOU AGAIN FOR YOUR PARTICIPATION   Study Researcher: Vanessa Caba Machado   Email: V.CabaMachado@2015.ljmu.ac.uk Study Supervisor: Dr David McIlroy   Email: D.McIlroy@ljmu.ac.uk

Appendix E

Cross-cultural Study: Survey Spain

CONSENTIMIENTO INFORMADO

NOMBRE DE LA INVESTIGACIÓN:

 Uso de las tecnologías: Implicaciones para el bienestar subjetivo, la ansiedad, y la salud mental.

Profesor Responsable: Dr David McIlroy (Ciencias Naturales y Psicología, Liverpool John Moores University) Email: D.McIlroy@ljmu.ac.uk

Alumno Responsable: Vanessa Caba Machado Email: V.CabaMachado@2015.ljmu.ac.uk

Información *En el presente estudio se examinan las relaciones entre el uso de la tecnología, la ansiedad y el bienestar. El estudio constará de la compleción de un conjunto de cuestionarios de forma telemática lo que llevará aproximadamente 35 minutos de duración. Las preguntas tratan sobre el uso de diversos dispositivos tecnológicos, aplicaciones y redes sociales en uno de ellos. Los otros son cuestionarios estandarizados habituales en la investigación psicológica sobre el bienestar.*

 Su participación será recompensada con una papeleta experimental que le puede ser contabilizada en cualquiera de las asignaturas del Departamento de Psicología Experimental. Además, se espera que esta investigación contribuya a entender cómo el uso de las tecnologías está asociado con importantes aspectos de nuestras vidas. No hay riegos potenciales asociados con la compleción de este cuestionario.

 No obstante, es importante que sepa que su participación es voluntaria y en cualquier caso puede abandonar el experimento sin que por ello se le penalice, y sin necesidad de tener que dar explicaciones.

 De acuerdo a la Ley 15/1999 de Protección de Datos de Carácter Personal, los datos personales que se le requieren (p.ej. edad, sexo, etc) son los necesarios para cubrir los objetivos del estudio.
 Cualquier información de carácter personal que pueda ser identificable será conservada y procesada por medios informáticos en condiciones de seguridad. El acceso a dicha información quedará restringido al personal de investigación autorizado que estará obligado a mantener la confidencialidad de la información. De acuerdo con la ley vigente, tiene usted derecho al acceso de sus datos personales; asimismo, y si está justificado, tiene derecho a su rectificación y cancelación. Si así lo desea, deberá solicitarlo al investigador de este estudio. ***Consentimiento***

 Acepto participar en el estudio que se lleva a cabo bajo la supervisión del

Departamento de Psicología Experimental de la Universidad de Granada.

He tomado esta decisión basándome en la información que he se me ha proporcionado por escrito y he tenido la oportunidad de recibir información adicional que he solicitado. Entiendo que puedo retirar este consentimiento en cualquier momento sin recibir una penalización por ello. Y que toda información presente en este estudio será manejada de forma confidencial. **Acepto (para pasar a la pantalla siguiente y responder los cuestionarios has de clicar en la casilla)** _____

_____ *Si tienes algún comentario relacionado con la organización de esta investigación u otra llevada a cabo por el Departamento de Psicología Experimental, escribe a la siguiente dirección:* experimental@ugr.es

○ Acepto

Page Break

Sobre ti

Género

◯ Hombre

◯ Mujer

Edad:

_____

Nacionalidad:

_____

¿En qué curso estás matriculado/a?

◯ 1º

◯ 2º

◯ 3º

◯ 4º

◯ 5º

◯ Posgrado

Modalidad de curso:

○ Tiempo completo

○ Tiempo parcial

¿Qué titulación estudias?

_____

Empleo:

○ Si

○ No

Si dispones de empleo mientras cursas tus estudios por favor responde a la siguiente pregunta:
¿De cuántas horas a la semana es tu empleo?

_____

Residencia durante el curso:

☐   Residencia de estudiantes

☐   Vivienda de alquiler

☐   Vivienda de los padres

☐   Otra

Por favor, indica lo más exactamente possible tus ingresos anuales, incluyendo salario de empleo y/o becas de estudiante.

_____

Page Break ———

<u>USO GENERAL DE LA TECNOLOGIA</u>

- -

A continuación, presentamos algunas preguntas sobre el uso general de la nuevas tecnologías. Por favor indica con qué frecuencia usas cada uno de estos dispositivos cada día. Por favor considera todos los usos excepto escuchar música. Por ejemplo, considera llamar, enviar mensajes, usar el Facebook, e-mail, enviar fotos, jugar a juegos, navegar por internet, ver vídeos, y otros usos a través de aplicaciones.

- -

Móvil

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

- -

Ordenador portátil

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Ordenador de sobremesa

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Tablet

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Ipad

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

End of Block: Default Question Block

Start of Block: Block 1

Por favor indica con qué frecuencia realizas las siguientes actividades en cualquier dispositivo (móvil, ordenador portátil o de sobremesa, tablet, etc.)

Comprobar el e-mail.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Navegar por internet.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Comprobar tu perfil de las redes sociales.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Ojear los perfiles de otras personas.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Actualizar tu estado.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Comentar el contenido en el perfil de otras personas.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Dar click en 'me gusta' a publicaciones de otras personas.

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Jugar a juegos

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Enviar mensajes

- ○ Nunca

- ○ Una vez al mes

- ○ Varias veces al mes

- ○ Una vez a la semana

- ○ Varias veces a la semana

- ○ Una vez al día

- ○ Varias veces al día

- ○ Una vez cada hora

- ○ Varias veces cada hora

- ○ Todo el tiempo

Realizar llamadas

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Recibir llamadas

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces cada hora

○ Todo el tiempo

Por favor indica con qué frecuencia usas cada una de las siguientes redes sociales y aplicaciones.

Facebook

- ○ Nunca
- ○ Una vez al mes
- ○ Varias veces al mes
- ○ Una vez a la semana
- ○ Varias veces a la semana
- ○ Una vez al día
- ○ Varias veces al día
- ○ Una vez cada hora
- ○ Varias veces en una hora
- ○ Todo el tiempo

Instagram

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Tumblr

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Twitter

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Snapchat

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Whatsapp

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Youtube

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Vine

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Google+

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Aplicaciones con fines educativos

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Otras aplicaciones

○ Nunca

○ Una vez al mes

○ Varias veces al mes

○ Una vez a la semana

○ Varias veces a la semana

○ Una vez al día

○ Varias veces al día

○ Una vez cada hora

○ Varias veces en una hora

○ Todo el tiempo

Por favor selecciona una respuesta para indicar en qué grado estás de acuerdo o en desacuerdo con cada frase.

Pasar mucho tiempo usando cualquier dispositivo tecnológico (móvil, ordenador portátil, ordenador de sobremesa, tablet, etc) me hace sentir ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Me pongo ansioso durante una tarea académica si me distraigo con dispositivos electrónicos.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Ver muchas noticias e información diversa en la red me hace sentir ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Estar conectado/a a todas horas con gente me hace sentir ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Recibir mensajes de gente a través de mis dispositivos electrónicos me produce sentimientos de ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Recibir mensajes de gente a través de diferentes redes sociales me produce sentimientos de ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Me siento controlado por mis dispositivos electrónicos.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Siento la presión de responder a mensajes inmediatamente.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Mis intentos de aliviar mi ansiedad académica acudiendo a la tecnología no me funcionan.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Me preocupa lo que publico (escritos, fotos, vídeos, etc) en las redes sociales.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Esperar respuestas a mis mensajes me hace sentir ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Recibir información que no quiero a través de las redes sociales me hace sentir ansiedad.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Prefiero centrarme en una tarea académica hasta que la termino y después cambiar a otra.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Cuando estoy haciendo una tarea académica que requiere esfuerzo me enfrasco en otras actividades digitales para postergar esa tarea.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Cuando estoy haciendo una tarea académica, cambiar a otras actividades usando mis dispositivos electrónicos afecta positivamente a mi estado de ánimo.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Cuando estoy haciendo una tarea académica, cambiar a otras actividades usando mis dispositivos electrónicos me despeja aliviándome el estrés.

◯ Absolutamente de acuerdo

◯ Fuertemente de acuerdo

◯ De acuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ En desacuerdo

◯ Fuertemente en desacuerdo

◯ Absolutamente en desacuerdo

Cuando estoy haciendo una tarea académica, cambiar a otras actividades usando mis dispositivos electrónicos es beneficioso para mi trabajo académico.

◯ Absolutamente de acuerdo

◯ Fuertemente de acuerdo

◯ De acuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ En desacuerdo

◯ Fuertemente en desacuerdo

◯ Absolutamente en desacuerdo

Cuando utilizo las redes sociales me siento menos aislado.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Después de usar las redes sociales me siento más feliz.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Pasar tiempo en internet o en redes sociales me deprime.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Pasar tiempo usando cualquier dispositivo electrónico aumenta mi calidad de vida.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Pasar tiempo usando las redes sociales aumenta mi calidad de vida.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Usar las redes sociales me hace sentir satisfecho conmigo mismo.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Usar cualquier tipo de dispositivo electrónico me hace sentir satisfecho conmigo mismo.

◯ Absolutamente de acuerdo

◯ Fuertemente de acuerdo

◯ De acuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ En desacuerdo

◯ Fuertemente en desacuerdo

◯ Absolutamente en desacuerdo

Usar las redes sociales me hace sentir menos satisfecho con mi vida.

◯ Absolutamente de acuerdo

◯ Fuertemente de acuerdo

◯ De acuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ En desacuerdo

◯ Fuertemente en desacuerdo

◯ Absolutamente en desacuerdo

Usar cualquier tipo de dispositivo electrónico me hace sentir menos satisfecho con mi vida.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Las redes sociales son una verdadera fuente de comodidad para mí.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Cuando uso redes sociales comparo mis logros con los de otros.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

La gente que veo en las redes sociales parece tener mejor vida que yo.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

En las redes sociales los usuarios se comparan entre ellos constantemente.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

Ojear los perfiles de otras personas en las redes sociales me presiona a tener un perfil mejor.

○ Absolutamente de acuerdo

○ Fuertemente de acuerdo

○ De acuerdo

○ Ni de acuerdo ni en desacuerdo

○ En desacuerdo

○ Fuertemente en desacuerdo

○ Absolutamente en desacuerdo

En las redes sociales me comparo socialmente (ej. habilidades sociales, popularidad) con otra gente.

- ○ Absolutamente de acuerdo

- ○ Fuertemente de acuerdo

- ○ De acuerdo

- ○ Ni de acuerdo ni en desacuerdo

- ○ En desacuerdo

- ○ Fuertemente en desacuerdo

- ○ Absolutamente en desacuerdo

Más abajo hay cinco afirmaciones con las que puedes estar de acuerdo o en desacuerdo. Utilizando la siguiente escala que se te presenta, indica tu acuerdo con cada una. Por favor, responde a las preguntas abierta y sinceramente.

En la mayoría de las cosas, mi vida está cerca de mi ideal.

- ○ Completamente en desacuerdo

- ○ En desacuerdo

- ○ Más bien en desacuerdo

- ○ Ni de acuerdo ni en desacuerdo

- ○ Más bien de acuerdo

- ○ De acuerdo

- ○ Completamente de acuerdo

Las condiciones de mi vida son excelentes.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Estoy satisfecho con mi vida.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Hasta ahora, he conseguido las cosas que para mí son importantes en la vida.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Si volviese a nacer, no cambiaría casi nada de mi vida.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Page Break

Las siguientes frases describen cómo se siente a veces la gente. Indica con qué frecuencia cada frase describe la forma en que te sientes.

¿Con qué frecuencia sientes que la gente que te rodea te entiende?

- ○ Nunca me siento de ese modo
- ○ Raramente me siento así
- ○ Me siento así con frecuencia
- ○ Me siento así a menudo.

¿Con qué frecuencia sientes que te falta compañía?

- ○ Nunca me siento de ese modo
- ○ Raramente me siento así
- ○ Me siento así con frecuencia
- ○ Me siento así a menudo.

¿Con qué frecuencia sientes que no hay nadie a quien puedas pedir ayuda?

- ○ Nunca me siento de ese modo
- ○ Raramente me siento así
- ○ Me siento así con frecuencia
- ○ Me siento así a menudo.

¿Con qué frecuencia te sientes solo/a?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que formas parte de un grupo de amigos/as?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que tienes mucho en común con la gente que te rodea?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que ya no tienes a nadie cerca de ti?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que tus intereses e ideas no son compartidos por quienes te rodean?

- ○ Nunca me siento de ese modo

- ○ Raramente me siento así

- ○ Me siento así con frecuencia

- ○ Me siento así a menudo.

¿Con qué frecuencia sientes que eres una persona sociable y amistosa?

- ○ Nunca me siento de ese modo

- ○ Raramente me siento así

- ○ Me siento así con frecuencia

- ○ Me siento así a menudo.

¿Con qué frecuencia te sientes cercano a las personas?

- ○ Nunca me siento de ese modo

- ○ Raramente me siento así

- ○ Me siento así con frecuencia

- ○ Me siento así a menudo.

¿Con qué frecuencia te sientes excluido?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que tus relaciones sociales no son significativas?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que nadie te conoce realmente bien?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia te sientes aislado/a de los demás?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que puedes encontrar compañía cuando lo deseas?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que hay personas que realmente te comprenden?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia te sientes tímido?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que tienes personas alrededor, pero que no están contigo?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que hay personas con quien puedes hablar?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

¿Con qué frecuencia sientes que hay personas con las que puedes contar?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo.

Page Break

Piense en lo que has hecho y experimentado en las últimas cuatro semanas. Evalúa qué tipo de sentimientos has experimentado siguiendo la escala que se te presenta. En las últimas cuatro semanas he tenido sentimientos…

Positivos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Negativos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Buenos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Malos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Agradables

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Desagradables

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Felices

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Tristes

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De miedo

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Alegres

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De enfado

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De satisfacción

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Page Break

A continuación se te presentan una serie de afirmaciones. Lee cada afirmación atentamente e indica cómo te sientes sobre cada afirmación.

Cuando necesito algo, sé que hay alguien que me puede ayudar.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Cuando tengo penas o alegrías, hay alguien que me puede ayudar.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Tengo la seguridad de que mi familia trata de ayudarme.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Mi familia me da la ayuda y apoyo emocional que requiero.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Hay una persona que me ofrece consuelo cuando lo necesito.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Tengo la seguridad de que mis amigos tratan de ayudarme.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo contar con mis amigos cuando tengo problemas.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo conversar de mis problemas con mi familia.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Cuando tengo alegrías o penas puedo compartirlas con mis amigos.

◯ Muy fuertemente en desacuerdo

◯ Fuertemente en desacuerdo

◯ Ligero desacuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ Ligeramente de acuerdo

◯ Fuertemente de acuerdo

◯ Muy fuertemente de acuerdo

Hay una persona que se interesa por lo que yo siento.

◯ Muy fuertemente en desacuerdo

◯ Fuertemente en desacuerdo

◯ Ligero desacuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ Ligeramente de acuerdo

◯ Fuertemente de acuerdo

◯ Muy fuertemente de acuerdo

Mi familia me ayuda a tomar decisiones.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo conversar de mis problemas con mis amigos.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

A continuación, encontrarás unas frases que se utilizan corrientemente para describirse uno a sí mismo. Lee cada frase y señala la respuesta que indique mejor cómo te sientes en general, en la mayoría de las ocasiones. No hay respuestas buenas ni malas. No emplees demasiado tiempo en cada frase y contesta señalando la respuesta que mejor describa tu situación presente.

Me siento bien.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me canso rápidamente.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Siento ganas de llorar.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me gustaría ser tan feliz como otros.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Pierdo oportunidades por no decidirme pronto.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento descansado.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy una persona tranquila, serena y sosegada.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Veo que las dificultades se amontonan y no puedo con ellas.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me preocupo demasiado por cosas sin importancia.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy feliz.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Suelo tomar las cosas demasiado seriamente.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me falta confianza en mí mismo.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento seguro.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

No suelo afrontar las crisis o dificultades.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento triste (melancólico).

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Estoy satisfecho.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me rondan y molestan pensamientos sin importancia.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me afectan tanto los desengaños que no puedo olvidarlos.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy una persona estable.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Cuando pienso sobre asuntos y preocupaciones actuales me pongo tenso y agitado.

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

A continuación, encontrarás unas frases que se utilizan corrientemente para describirse uno a sí mismo. Lee cada frase y señala la respuesta que indique mejor <u>cómo te sientes ahora mismo, en este momento</u>. No hay respuestas buenas ni malas. No emplees demasiado tiempo en cada frase y contesta señalando la respuesta que mejor describa tu situación presente.

Me siento seguro.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Estoy contrariado.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Tengo confianza en mí mismo.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Estoy relajado.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Estoy preocupado.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Me siento aturdido y sobreexcitado.

○ Para nada

○ Algo

○ Moderadamente

○ Mucho

Para poder obtener la papeleta experimental por favor escribe los datos siguientes:
Tu correo electrónico:

_____

- -

Los 6 últimos dígitos de tu DNI:

_____

HOJA DE INFORMACIÓN

NOMBRE DEL ESTUDIO: **Uso de las tecnologías: Implicaciones para el bienestar subjetivo, la ansiedad, y la salud mental.**

Dr David McIlroy Email: D.McIlroy@ljmu.ac.uk
Alumno Responsable: Vanessa Caba Machado   Email:
V.CabaMachado@2015.ljmu.ac.uk

¡Gracias por participar en este estudio!

Breve descripción del propósito de este experimento: *Los nuevos avances tecnológicos, móviles, redes sociales y diversas aplicaciones se han convertido en una parte importante del día a día de la sociedad actual. Sin embargo, los estudiantes se han convertido en los usuarios más activos y entusiasmados de las nuevas tecnologías. El objetivo de esta investigación es examinar las relaciones entre el uso de la tecnología, la ansiedad y el bienestar. Además, se pretende investigar los procesos (multitarea, la presión por mantener una conexión constante con otras personas, cantidad de información que se recibe, etc) que subyacen a estas relaciones en estudiantes universitarios. Este estudio se está llevando a cabo en tres países: Reino Unido, Turquía y España. Para conseguir los objetivos del estudio, los investigadores han desarrollado un instrumento de medida con el fin de: (1) operacionalizar el uso de la tecnología; (2) capturar las percepciones de los participantes en relación al uso de ésta y los constructos estudiados; e (3) indagar en los factores que pueden estar mediando estas relaciones. Se espera que los resultados obtenidos contribuyan al desarrollo de modelos teóricos y estrategias de intervención que permitan facilitar un uso adaptativo de la tecnología para incrementar la calidad de vida, bienestar y salud mental de nuestra sociedad.*

Si tiene algún comentario o duda relacionada con este estudio puede consultarla en la dirección de email de los siguientes investigadores:

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Appendix F

Cross-cultural Study: Survey Turkey

PIS

KATILIMCI BİLGİLENDİRME FORMU
Teknoloji Kullanımı: öznel iyi oluş, kaygı, akıl sağlığı ve için çıkarımlar.

Vanessa Caba Machado: Natural Sciences and Psychology (Doğa Bilimleri ve Psikoloji)

Bir araştırma çalışmasına katılmaya davetlisiniz. Karar vermeden önce araştırmanın neden yapıldığını ve neleri içerdiğini anlamanız önemlidir. Lütfen aşağıdaki bilgileri okumak için zaman ayırın. Net olmayan herhangi bir şey olup olmadığını veya daha fazla bilgi isteyip istemediğinizi sorun. Katılmak isteyip istemediğinize karar vermek için düşünmenizi öneririz.

1. ***Çalışmanın amacı nedir?***
Bu araştırmanın amacı, teknoloji kullanımı, kaygı ve esenlik arasındaki ilişkileri incelemektir. Araştırma aynı zamanda üniversite öğrencilerinin ilişkilerinin altında yatan süreçleri (görev değişimi, insanlarla sürekli bağlantı, bilgi miktarı, vb.) anlamayı hedeflemektedir.

2. ***Katılmak zorunda mıyım?*** *Hayır. Katılıp katılmayacağınıza karar vermek size kalmış. Eğer katılırsanız bu bilgi formuna sahip olacaksınız. Bu anketi doldurarak katılmayı kabul ediyorsunuz. Anketin tamamlanması 30-40 dakika sürecek. Hala herhangi bir zamanda ve bir sebep göstermeden çekilmekte özgürsünüz. Geri çekilme kararı, size ve haklarınız etkilemeyecektir.*

3. ***Katılırsam bana ne olacak?*** *Bu araştırmaya katılmayı kabul ederseniz, çevrimiçi bir anketi doldurmanız istenecektir. Anket, çeşitli teknolojik cihazlar kullanımı (tablet, dizüstü bilgisayar, cep telefonları, masaüstü bilgisayarlar, IPad, vb.), Uygulamalar (ör. WhatsApp) ve sosyal ağlar (Facebook, Instagram vb.) hakkında sorular içermektedir. Araştırma ayrıca, yaşam tarzınızın teknolojinin kullanımı ile ilgili çeşitli yönlerini de inceler.Bunlar sağlık durumunuz, algılanan kaygınız ve. Ek olarak temel demografik bilgiler de toplanacaktır.*

4. ***Araştırmaya Kimler katılabilir?*** *18 yaşında veya daha büyük bir üniversite öğrencisi iseniz katılabilirsiniz. Hem dijital hem de dijital olmayan teknolojilerin (tablet, dizüstü bilgisayar, cep telefonları, masaüstü bilgisayarlar, IPad vb.), Uygulamaların (ör. WhatsApp) ve Instagram ve Facebook gibi sosyal ağların kullanıcıları araştırmaya katılmaya davetlidir.*

5. ***Herhangi bir risk / fayda var mı?*** *Bu araştırmaya katılmanın bir yararı yoktur. Ancak, bulgular araştırmacıların teknoloji kullanımının hayatımızdaki önemli yönleriyle nasıl ilişkili olduğunu anlamalarına yardımcı olabilir. Bu anketin tamamlanması ile ilgili*

açık risk bulunmamaktadır.

6. Çalışmaya katılmam gizli tutulacak mı? Sağladığınız bilgiler kesinlikle gizli tutulacaktır. Sizi üniversite e-posta adresinizi ankete dahil etmeye davet edeceğiz. Sağladığınız demografik bilgiler (örn. Yaş, cinsiyet) sizi tanımlamak için kullanılmaz ve üçüncü bir tarafa aktarılmaz. Bu bilgi sadece veri analizi amacıyla ve ne tür insanların yer aldığını anlamak için kullanılacaktır. Bütün veriler araştırmacılar tarafından yok edilmeden önce en az 5 yıl süreyle saklanacaktır. Anketin tamamlanmasından sonra bu çalışmadan çekilmek istiyorsanız veya herhangi bir genel sorunuz varsa, lütfen araştırmacılarla iletişime geçin: Vanessa Caba Machado V.CabaMachado@2015.ljmu.ac.uk David McIlroy D.McIlroy@ljmu.ac.uk Omer Faruk Ursavas omer.ursavas@erdogan.edu.tr

Bu araştırmaya katılmanızla ilgili herhangi bir endişeniz varsa, lütfen bunları öncelikle araştırmacıyla görüşün. Bir şikayette bulunmak isterseniz, lütfen researchethics@ljmu.ac.uk ile iletişime geçiniz. İletişiminizin uygun şekilde bağımsız bir kişiye yönlendirileceğini garanti etmekteyiz.

Consent Bilgi formunu okudum ve araştırmaya katılmaktan memnuniyet duyuyorum. Bu çevrimiçi ölçme paketini doldurup ve göndererek, bu çalışmasının bir parçası olduğumu ve verdiğim cevapların bilgi formunda açıklandığı gibi kullanılmasına izin veriyorum.

○ Kabul Ediyorum (1)

DEMO
Hakkınızda

Gender Cinsiyetniz?

○ Erkek (1)

○ Kadın (5)

○ Diğer (6)

○ Belirtmek istemiyorum (7)

Age Yaşınız?(Yıl)

_____

Natio Uyruk

_____

Study Şuan ki eğitim dereceniz?

○ Seviye 3 (Hazırlık/Bilimsel Hazırlık) (1)

○ Seviye 4 (1. Yıl Lisans) (2)

○ Seviye 5 (2. Yıl Lisans) (3)

○ Seviye 6 (3-4.Yıl Lisans) (4)

○ Seviye 7 (Yüksek Lisans) (5)

○ Seviye 8 (Doktora veya Doktora sonrası araştırma) (6)

Status Şuan ki öğrenci durumunuz nedir?

○ Sürekli (1)

○ Kısmi zamanlı (3)

Field Araştırma alanınız?

_____

Employ Bir geliriniz var mı?

○ Evet (1)

○ Hayır (3)

Workinghours Haftada kaç saat çalışıyorsunuz?

_____

Reside Nerede kalıyorsunuz?

☐ Devlet Yurdu / Özel Yurt (1)

☐ Özel Ev (5)

☐ Ailemin yanında (6)

☐ Diğer (7)

Income Aldığınız kredi, burs vb desteklerde dahil olmak üzere brüt yıllık gelirinizi belirtiniz

_____

Page Break

Techno <u>Genel Teknoloji Kullanımı</u>

Technousage Lütfen aşağıdaki cihazları hangi sıklıkta kullandığınızı belirtin. Müzik dinlemek dışındaki tüm kullanımları dikkate alın. Örneğin, telefon etmek, Facebook, e-posta, fotoğraf gönderimi, oyun, internet kullanımı, video izleme ve tüm diğer uygulama ve programlar kapsamında olan kullanımlar.

Mobile Cep telefonu

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (11)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Lap Dizüstü bilgisayar

○ Asla/hiç (1)

○ Ayda bir kere (3)

○ Ayda birkaç kere (4)

○ Haftada bir kere (5)

○ Haftada bir kaç kere (6)

○ Günde bir kere (7)

○ Günde birkaç kere (8)

○ Saatte bir (11)

○ Saatte birkaç kere (10)

○ Daima/Her zaman (12)

Desk Masaüstü bilgisayar

○ Asla/hiç (5)

○ Ayda bir kere (12)

○ Ayda birkaç kere (13)

○ Haftada bir kere (6)

○ Haftada bir kaç kere (7)

○ Günde bir kere (8)

○ Günde birkaç kere (9)

○ Saatte bir (10)

○ Saatte birkaç kere (11)

○ Daima/Her zaman (14)

Tablet   Tablet

○ Asla/hiç (2)

○ Ayda bir kere (3)

○ Ayda birkaç kere (4)

○ Haftada bir kere (5)

○ Haftada bir kaç kere (6)

○ Günde bir kere (7)

○ Günde birkaç kere (8)

○ Saatte bir (9)

○ Saatte birkaç kere (10)

○ Daima/Her zaman (11)

Ipad   Ipad

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

End of Block: Default Question Block

Start of Block: kişisel sorular

Frequencyactivities Lütfen aşağıdaki etkinlikleri, herhangi bir cihazı kullanarak (cep telefonu, dizüstü bilgisayar, masaüstü bilgisayar, tablet vb.) hangi sıklıkta gerçekleştirdiğinizi belirtiniz.

Email E-postanızı kontrol etmek.

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Inter İnternette arama yapmak.

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

SNS   Sosyal medya hesabınızı kontrol etmek.

○ Asla/hiç (2)

○ Ayda bir kere (3)

○ Ayda birkaç kere (4)

○ Haftada bir kere (5)

○ Haftada bir kaç kere (6)

○ Günde bir kere (7)

○ Günde birkaç kere (8)

○ Saatte bir (9)

○ Saatte birkaç kere (10)

○ Daima/Her zaman (11)

OtherSNS Diğer insanların profillerini görüntüleme(sosyal medya)

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Status Durumunuzu güncellemek (sosyal medya)

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Comment Başkalarının paylaşımlarına yorum yazmak

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

"Ilike"   Başkalarının paylaşımlarına 'Beğen' diye tıklamak

○ Asla/hiç (1)

○ Ayda bir kere (3)

○ Ayda birkaç kere (4)

○ Haftada bir kere (5)

○ Haftada bir kaç kere (6)

○ Günde bir kere (7)

○ Günde birkaç kere (26)

○ Saatte bir (10)

○ Saatte birkaç kere (11)

○ Daima/Her zaman (34)

Games   Oyun oynamak

○ Asla/hiç (1)

○ Ayda bir kere (11)

○ Ayda birkaç kere (12)

○ Haftada bir kere (13)

○ Haftada bir kaç kere (14)

○ Günde bir kere (15)

○ Günde birkaç kere (16)

○ Saatte bir (17)

○ Saatte birkaç kere (18)

○ Daima/Her zaman (19)

Text   Mesaj göndermek

○ Asla/hiç (11)

○ Ayda bir kere (12)

○ Ayda birkaç kere (13)

○ Haftada bir kere (14)

○ Haftada bir kaç kere (15)

○ Günde bir kere (16)

○ Günde birkaç kere (17)

○ Saatte bir (18)

○ Saatte birkaç kere (19)

○ Daima/Her zaman (20)

Mcalls Çağrı göndermek

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Rcalls   Gelen çağrıyı cevaplamak

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

SNS&apps Lütfen aşağıdaki sosyal medya ağları ve uygulamaları hangi sıklıkta kullandığınızı belirtin

---

Fb Facebook

- ○ Asla/hiç (1)

- ○ Ayda bir kere (2)

- ○ Ayda birkaç kere (3)

- ○ Haftada bir kere (4)

- ○ Haftada bir kaç kere (7)

- ○ Günde bir kere (8)

- ○ Günde birkaç kere (9)

- ○ Saatte bir (10)

- ○ Saatte birkaç kere (11)

- ○ Daima/Her zaman (12)

Insta Instagram

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Tumb Tumblr

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Twitt Twitter

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Snap Snapchat

◯ Asla/hiç (1)

◯ Ayda bir kere (2)

◯ Ayda birkaç kere (3)

◯ Haftada bir kere (4)

◯ Haftada bir kaç kere (5)

◯ Günde bir kere (6)

◯ Günde birkaç kere (7)

◯ Saatte bir (8)

◯ Saatte birkaç kere (9)

◯ Daima/Her zaman (10)

Whatsapp Whatsapp

◯ Asla/hiç (1)

◯ Ayda bir kere (2)

◯ Ayda birkaç kere (3)

◯ Haftada bir kere (4)

◯ Haftada bir kaç kere (5)

◯ Günde bir kere (6)

◯ Günde birkaç kere (7)

◯ Saatte bir (8)

◯ Saatte birkaç kere (9)

◯ Daima/Her zaman (10)

youtu Youtube

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Vine Vine

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Google+ Google+

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Eduapps Eğitim Amaçlı Uygulamalar

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Otherapps Diğer uygulamalar

○ Asla/hiç (1)

○ Ayda bir kere (2)

○ Ayda birkaç kere (3)

○ Haftada bir kere (4)

○ Haftada bir kaç kere (5)

○ Günde bir kere (6)

○ Günde birkaç kere (7)

○ Saatte bir (8)

○ Saatte birkaç kere (9)

○ Daima/Her zaman (10)

Perceptions Aşağıdaki yönergelere ne derecede katıldığınızı (ya da katılmadığınızı) belirtin

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Anx1 Herhangi bir elektronik cihazı (cep telefonu, dizüstü bilgisayar, masaüstü bilgisayar vb.) uzun süre kullanmak bende kaygı yaratır

○ Kesinlikle katılıyorum (6)

○ Oldukça katılıyorum (1)

○ Katılıyorum (2)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (3)

○ Katılmıyorum (4)

○ Oldukça katılmıyorum (5)

○ Kesinlikle katılmıyorum (7)

Anx2 Akademik bir iş yaparken elektronik cihazlar tarafından dikkatim dağılırsa kaygılanırım

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (8)

○ Katılıyorum (9)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (10)

○ Katılmıyorum (11)

○ Oldukça katılmıyorum (12)

○ Kesinlikle katılmıyorum (13)

Anx3 İnternette pek çok çeşitli haber ve bilgi görmek bende kaygı duygusu yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Anx6 İnsanlarla sürekli bağlantı halinde olmak beni kaygılandırır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Anx7 Elektronik cihazlar aracılığı ile İnsanlardan mesaj almak bende kaygı duygusu yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Anx8 İnsanlardan farklı sosyal medya ortamlarından mesaj almak bende kayg duygusu yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Anx9 Elektronik cihazlarım tarafından kontrol edildiğimi hissediyorum.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (7)

○ Katılıyorum (8)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (9)

○ Katılmıyorum (10)

○ Oldukça katılmıyorum (11)

○ Kesinlikle katılmıyorum (12)

Anx10   Mesajlara anında cevap vermek için baskı altında olduğumu hissediyorum.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (7)

○ Katılıyorum (8)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (9)

○ Katılmıyorum (10)

○ Oldukça katılmıyorum (11)

○ Kesinlikle katılmıyorum (12)

Anx11 Akademik kaygımı teknoloji kullanarak dağıtmak benim için işe yarayan bir yöntem değil.

○ Kesinlikle katılıyorum (8)

○ Oldukça katılıyorum (13)

○ Katılıyorum (14)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (15)

○ Katılmıyorum (16)

○ Oldukça katılmıyorum (17)

○ Kesinlikle katılmıyorum (18)

2   Sosyal medyada paylaştıklarım (yazı, resim, video vb.) konusunda endişeleniyorum.

○ Kesinlikle katılıyorum (8)

○ Oldukça katılıyorum (13)

○ Katılıyorum (14)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (15)

○ Katılmıyorum (16)

○ Oldukça katılmıyorum (17)

○ Kesinlikle katılmıyorum (18)

Anx13   Mesajlarıma cevap beklemek beni kaygılandırır.

○ Kesinlikle katılıyorum (8)

○ Oldukça katılıyorum (14)

○ Katılıyorum (15)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (16)

○ Katılmıyorum (17)

○ Oldukça katılmıyorum (18)

○ Kesinlikle katılmıyorum (19)

Anx14 Sosyal medya aracılığı ile istemediğim bilgiler almak, beni kaygılandırır.

○ Kesinlikle katılıyorum (8)

○ Oldukça katılıyorum (13)

○ Katılıyorum (14)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (15)

○ Katılmıyorum (16)

○ Oldukça katılmıyorum (17)

○ Kesinlikle katılmıyorum (18)

well1   Sosyal medya kullanırken kendimi daha az izole/tek başına kalmış hissederim .

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

well2 Sosyal medya kullandıktan sonra kendimi daha mutlu hissederim.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

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well3 İnternet veya sosyal medyada vakit geçirmek duygu durumumu aşağı çeker.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

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well4 Herhangi bir (elektronik) cihazı kullanmak hayat kalitemi yükseltir.

○ Kesinlikle katılıyorum (2)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

---

well5 Sosyal medya kullanarak zaman geçirmek hayat kalitemi yükseltir.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

well6 Sosyal medya kullanmak beni tatmin eder.

○ Kesinlikle katılıyorum (2)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

---

well7 Herhangi bir elektronik cihazı kullanmak beni tatmin Eder.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

well8 Sosyal medya kullanmak hayatım ile ilgili tatminsizlik yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

---

well9 Herhangi bir elektronik cihazı kullanmak hayatım ile ilgili tatminsizlik yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

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well10 Sosyal medya benim için duygusal bir sığınaktır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Social1 Sosyal medya üzerinde kendi başarlarımı diğerleri ile karşılaştırırım.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Social2 Sosyal medyada gördüğüm insanlar, benden daha iyi hayatlara sahip görünüyorlar.

○ Kesinlikle katılıyorum (2)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Social3 Sosyal medyada kullanıcılar sürekli kendilerini diğerleri ile karşılaştırırlar.

○ Kesinlikle katılıyorum (2)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Social4 Diğer insanların sosyal medya profillerini görüntülemek, daha iyi bir profil olması konusunda bende baskı yaratır.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

Social5 Sosyal medyada, kendimi sosyal olarak (sosyal beceri, popülarite gibi konularda) diğer insanlarla karşılaştırırım.

○ Kesinlikle katılıyorum (1)

○ Oldukça katılıyorum (6)

○ Katılıyorum (7)

○ Ne katılıyorum ne de katılmıyorum / Kararsızım (8)

○ Katılmıyorum (9)

○ Oldukça katılmıyorum (10)

○ Kesinlikle katılmıyorum (11)

SWL Aşağıdaki ifadelere katılıp katılmadığınızı görüşünüzü yansıtan rakamı maddenin. Doğru ya da yanlış cevap yoktur. Sizin durumunuzu yansıttığını düşündüğünüz rakam bizim için en doğru yanıttır. Lütfen, açık ve dürüst şekilde yanıtlayınız.

SWL1 Pek çok açıdan ideallerime yakın bir yaşamım var

○ Kesinlikle katılmıyorum (1)

○ Katılmıyorum (2)

○ Biraz katılmıyorum (3)

○ Ne katılıyorum ne de katılmıyorum (4)

○ Çok az katılıyorum (5)

○ Katılıyorum (7)

○ Kesinlikle katılıyorum (8)

- -

SWL2 Yaşam koşullarım mükemmeldir

○ Kesinlikle katılmıyorum (8)

○ Katılmıyorum (9)

○ Biraz katılmıyorum (10)

○ Ne katılıyorum ne de katılmıyorum (11)

○ Çok az katılıyorum (12)

○ Katılıyorum (13)

○ Kesinlikle katılıyorum (14)

- -

SWL3 Yaşamım beni tatmin ediyor

○ Kesinlikle katılmıyorum (1)

○ Katılmıyorum (8)

○ Biraz katılmıyorum (9)

○ Ne katılıyorum ne de katılmıyorum (10)

○ Çok az katılıyorum (11)

○ Katılıyorum (12)

○ Kesinlikle katılıyorum (13)

SWL4 Şimdiye kadar, yaşamda istediğim önemli şeyleri elde ettim

○ Kesinlikle katılmıyorum (1)

○ Katılmıyorum (8)

○ Biraz katılmıyorum (9)

○ Ne katılıyorum ne de katılmıyorum (10)

○ Çok az katılıyorum (11)

○ Katılıyorum (12)

○ Kesinlikle katılıyorum (13)

SWL5 Hayatımı bir daha yaşama şansım olsaydı, hemen hemen hiçbir şeyi değiştirmezdim

○ Kesinlikle katılmıyorum (1)

○ Katılmıyorum (8)

○ Biraz katılmıyorum (9)

○ Ne katılıyorum ne de katılmıyorum (10)

○ Çok az katılıyorum (11)

○ Katılıyorum (12)

○ Kesinlikle katılıyorum (13)

UCLA

Aşağıda çeşitli duygu ve düşünceleri içeren ifadeler verilmektedir. Sizden istenilen her ifade de tanımlanan duygu ve düşünceyi ne sıklıkta hissettiğinizi ve düşündüğünüzü her biri için tek bir rakamı daire içine alarak belirtmeniz.

UCLA1 Kendimi çevremdeki insanlarla uyum içinde hissediyorum.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (2)

○ Ben bu durumu BAZAN Yaşarım (3)

○ Ben bu durumu SIK SIK Yaşarım (4)

UCLA2 Arkadaşım yok.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA3 Başvurabileceğim hiç kimse yok.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA4 Kendimi tek başınaymışım gibi hissetmiyorum.

    ◯ Ben bu durumu HİÇ Yaşamadım (1)

    ◯ Ben bu durumu NADİREN Yaşarım (5)

    ◯ Ben bu durumu BAZAN Yaşarım (6)

    ◯ Ben bu durumu SIK SIK Yaşarım (7)

UCLA5 Kendimi bir arkadaş grubunun bir parçası olarak hissediyorum.

    ◯ Ben bu durumu HİÇ Yaşamadım (1)

    ◯ Ben bu durumu NADİREN Yaşarım (5)

    ◯ Ben bu durumu BAZAN Yaşarım (6)

    ◯ Ben bu durumu SIK SIK Yaşarım (7)

UCLA6 Çevremdeki insanlarla bir ortak yönüm var.

    ◯ Ben bu durumu HİÇ Yaşamadım (1)

    ◯ Ben bu durumu NADİREN Yaşarım (5)

    ◯ Ben bu durumu BAZAN Yaşarım (6)

    ◯ Ben bu durumu SIK SIK Yaşarım (7)

UCLA7 Artık hiç kimseyle samimi değilim.

    ◯ Ben bu durumu HİÇ Yaşamadım (1)

    ◯ Ben bu durumu NADİREN Yaşarım (5)

    ◯ Ben bu durumu BAZAN Yaşarım (6)

    ◯ Ben bu durumu SIK SIK Yaşarım (7)

UCLA8 İlgilerim ve fikirlerim çevremdekilerce paylaşılıyor.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA9 Dışa dönük bir insanım.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA10 Kendime yakın hissettiğim insanlar var.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA11 Kendimi grubun dışına itilmiş hissediyorum.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA12 Arkadaşlarınızla olan ilişkilerin anlamsız olduğunu ne sıklıkla düşünürsünüz?

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA13 Hiç kimse beni gerçekten iyi tanımıyor.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA14 Kendimi diğer insanlardan soyutlanmış hissediyorum.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA15 İstediğim zaman arkadaş bulabilirim.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA16 Beni gerçekten anlayan insanlar var.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA17 Bu derece içime kapanmış olmaktan dolayı mutsuzum.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA18 Çevremde insanlar var ama benimle değiller.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA19 Konuşabileceğim insanlar var.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

UCLA20 Derdimi anlatabileceğim insanlar var.

○ Ben bu durumu HİÇ Yaşamadım (1)

○ Ben bu durumu NADİREN Yaşarım (5)

○ Ben bu durumu BAZAN Yaşarım (6)

○ Ben bu durumu SIK SIK Yaşarım (7)

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SPANE Lütfen, son bir ay içinde yaptıklarınızı düşününüz ve aşağıdaki duygulardan her birini ne kadar hissettiğinizi 1 ile 5 arasında değişen puanları kullanarak değerlendiriniz.

SPANE1 Olumlu

○ Asla (6)

○ Nadiren (10)

○ Bazen (7)

○ Sık sık (8)

○ Her zaman (9)

SPANE2 Olumsuz

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE3   İyi

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE4   Kötü

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE5   Keyifli

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE6   Keyifsiz

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE7   Mutlu

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE8   Üzgün

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE9   Korkulu

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE10   Neşeli

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE11   Kızgın

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

SPANE12   Hoşnut

○ Asla (1)

○ Nadiren (8)

○ Bazen (9)

○ Sık sık (10)

○ Her zaman (11)

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MSPSS Aşağıda 12 cümle ve her bir cümle altında da cevaplarınızı işaretlemeniz için 1'den 7'ye kadar rakamlar verilmiştir. Her cümlede söylenenin sizin için ne kadar çok doğru olduğunu veya olmadığını belirtmek için o cümle altındaki rakamlardan yalnız bir tanesini daire içine alarak işaretleyiniz. Bu şekilde 12 cümlenin her birine bir işaret koyarak cevaplarınızı veriniz. Lütfen hiçbir cümleyi cevapsız bırakmayınız. Sizce doğruya en yakın olan rakamı işaretleyiniz.

MSPSS1 Ailem ve arkadaşlar›m d›ş›nda olan ve ihtiyac›m olduğunda yan›mda olan bir insan (örneğin, flört, nişanl›, sözlü, akraba, komşu, doktor) var.

○ (Kesinlikle hay›r) 1 (1)

○ 2 (2)

○ 3 (3)

○ 4 (4)

○ 5 (5)

○ 6 (6)

○ (Kesinlikle evet) 7 (12)

MSPSS2 Ailem ve arkadaşlar›m d›ş›nda olan ve sevinç ve kederlerimi paylaşabileceğim bir insan (örneğin, flört, nişanl›, sözlü, akraba, komşu, doktor) var.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS3 Ailem (örneğin, annem, babam, eşim, çocuklar›m, kardeşlerim) bana gerçekten yard›mc› olmaya çal›ş›r.

○ (Kesinlikle hayır) 1 (4)

○ 2 (5)

○ 3 (6)

○ 4 (7)

○ 5 (8)

○ 6 (10)

○ (Kesinlikle evet) 7 (11)

MSPSS4 İhtiyac›m olan duygusal yard›m› ve desteği ailemden (örneğin, annemden, babamdan, eşimden, çocuklar›mdan, kardeşlerimden) al›r›m.

○ (Kesinlikle hayır) 1 (10)

○ 2 (12)

○ 3 (6)

○ 4 (7)

○ 5 (8)

○ 6 (9)

○ (Kesinlikle evet) 7 (13)

MSPSS5 Ailem ve arkadaşlar›m d›ş›nda olan ve beni gerçekten rahatlatan bir insan (örneğin, flört, nişanl›, sözlü, akraba, komşu, doktor) var.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS6 Arkadaşlarım bana gerçekten yardımcı olmaya çalışırlar.

○ (Kesinlikle hayır) 1 (4)

○ 2 (5)

○ 3 (6)

○ 4 (7)

○ 5 (8)

○ 6 (9)

○ (Kesinlikle evet) 7 (10)

MSPSS7 İşler kötü gittiğinde arkadaşlarıma güvenebilirim.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS8 Sorunlar›m› ailemle (örneğin, annemle, babamla, eşimle, çocuklar›mla, kardeşlerimle)konuşabilirim.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS9 Sevinç ve kederlerimi paylaşabileceğim arkadaşlar›m var.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS10 Ailem ve arkadaşlar›m d›ş›nda olan ve duygular›ma önem veren bir insan (örneğin, flört, nişanl›, sözlü, akraba, komşu, doktor) var.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS11 Kararlar›m› vermede ailem (örneğin, annem, babam, eşim, çocuklar›m, kardeşlerim) bana yard›mc› olmaya isteklidir.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

MSPSS12 Sorunlar›m› arkadaşlar›mla konuşabilirim.

○ (Kesinlikle hayır) 1 (1)

○ 2 (4)

○ 3 (5)

○ 4 (6)

○ 5 (7)

○ 6 (8)

○ (Kesinlikle evet) 7 (9)

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STAIT Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları bir takım ifadeler verilmiştir. (((((((Her ifadeyi okuyun, sonra da o anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretlemek suretiyle belirtin)))))))). Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin anında nasıl hissettiğinizi gösteren cevabı işaretleyin.

STAIT1 Genellikle keyfim yerindedir.

○ Hemen hiçbir zaman (5)

○ Bazen (8)

○ Çok zaman (9)

○ Hemen her zaman (10)

STAIT2 Genellikle çabuk yorulurum.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT3 Genellikle kolay ağlarım.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT4 Başkaları kadar mutlu olmak isterim.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT5 Çabuk karar veremediğim için fırsatları kaçırırım.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT6 Kendimi dinlenmiş hissediyorum.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT7 Genellikle sakin, kendine hakim ve soğukkanlıyım.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT8 Güçlüklerin yenemeyeceğim kadar biriktiğini hissederim.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT9 Önemsiz şeyler hakkında endişelenirim.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT10 Genellikle mutluyum.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT11 Herşeyi ciddiye alır ve endişelenirim.

◯ Hemen hiçbir zaman (1)

◯ Bazen (4)

◯ Çok zaman (5)

◯ Hemen her zaman (6)

STAIT12 Genellikle kendime güvenim yoktur.

◯ Hemen hiçbir zaman (1)

◯ Bazen (4)

◯ Çok zaman (5)

◯ Hemen her zaman (6)

STAIT13 Genellikle kendimi emniyette hissederim.

◯ Hemen hiçbir zaman (1)

◯ Bazen (4)

◯ Çok zaman (5)

◯ Hemen her zaman (6)

STAIT14 Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınırım.

◯ Hemen hiçbir zaman (1)

◯ Bazen (4)

◯ Çok zaman (5)

◯ Hemen her zaman (6)

STAIT15 Genellikle kendimi hüzünlü hissederim.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT16 Genellikle hayatımdan memnunum.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT17 Olur olmaz düşünceler beni rahatsız eder.

○ Hemen hiçbir zaman (1)

○ Bazen (4)

○ Çok zaman (5)

○ Hemen her zaman (6)

STAIT18 Hayal kırıklıklarını öylesine ciddiye alırım ki hiç unutamam.

   ○ Hemen hiçbir zaman (1)

   ○ Bazen (4)

   ○ Çok zaman (5)

   ○ Hemen her zaman (6)

STAIT19 Aklı başında ve kararlı bir insanım.

   ○ Hemen hiçbir zaman (1)

   ○ Bazen (4)

   ○ Çok zaman (5)

   ○ Hemen her zaman (6)

STAIT20 Son zamanlarda kafama takılan konular beni tedirgin ediyor.

   ○ Hemen hiçbir zaman (1)

   ○ Bazen (4)

   ○ Çok zaman (5)

   ○ Hemen her zaman (6)

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STAIS

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları bir takım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da o anda nasıl hissettiğinizi ifadelerin şağ tarafındaki parantezlerden uygun olanını işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin anında nasıl hissettiğinizi gösteren cevabı işaretleyin.

STAIS1 Şu anda sakinim.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS2 Kendimi emniyette hissediyorum.

○ HİÇ (1)

○ BİRAZ (4)

○ ÇOK (5)

○ TAMAMİYLE (6)

STAIS3 Su anda sinirlerim gergin.

○ HİÇ (1)

○ BİRAZ (4)

○ ÇOK (5)

○ TAMAMİYLE (6)

STAIS4 Pişmanlık duygusu içindeyim.

○ HİÇ (1)

○ BİRAZ (4)

○ ÇOK (5)

○ TAMAMİYLE (6)

STAIS5 Şu anda huzur içindeyim.

○ HİÇ (1)

○ BİRAZ (4)

○ ÇOK (5)

○ TAMAMİYLE (6)

STAIS6 Şu anda hiç keyfim yok.

○ HİÇ (1)

○ BİRAZ (4)

○ ÇOK (5)

○ TAMAMİYLE (6)

STAIS7 Başıma geleceklerden endişe ediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS8 Kendimi dinlenmiş hissediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS9 Şu anda kaygılıyım.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS10 Kendimi rahat hissediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS11 Kendime güvenim var.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS12 Şu anda asabım bozuk.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS13 Çok sinirliyim.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS14 Sinirlerimin çok gergin olduğunu hissediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS15 Kendimi rahatlamış hissediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS16 Şu anda halimden memnunum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS17 Şu anda endişeliyim.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS18 Heyecandan kendimi şaşkına dönmüş hissediyorum.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS19 Şu anda sevinçliyim.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

STAIS20 Şu anda keyfim yerinde.

○ HİÇ (1)

○ BİRAZ (2)

○ ÇOK (3)

○ TAMAMİYLE (4)

Page Break

LIVERPOOL JOHN MOORES UNIVERSITY

Bilgilendirme

Sayfası

Lütfen bu çalışma hakkındaki bilgileri okuyun, ardından yanıtlarınızı göndermek için bu sayfanın altındaki ">>" tuşuna basın.

Bu çalışmaya katıldığınız için teşekkür ederiz. Başka sorularınız varsa aşağıdaki ayrıntıları kullanarak araştırmacıyla iletişime geçmekten çekinmeyin.

Bu çalışmanın amacı, teknoloji kullanımı, kaygı ve esenlik arasındaki ilişkiyi araştırmaktı. Bu ölçme paketi aynı zamanda bu ilişkilerin altında yatan süreçleri (görev değiştirme, insanlarla sürekli bağlantı, bilgi aşımı ve sosyal karşılaştırma) anlama amacındaydı.

Çevrimiçi bir anket tamamlandı. Anket, çeşitli teknolojik cihazlar, uygulamalar ve sosyal ağ kullanımı ile ilgili sorular içeriyordu. Araştırma ayrıca, iyi oluş, kaygı ve teknolojinin kullanımı ile ilgili bazı süreçlerin deneyimi hakkındaki algılarınızı da değerlendirdi.

KATILIMINIZ İÇİN TEKRAR TEŞEKKÜRLER

 Study Researcher: Vanessa Caba Machado   Email: V.CabaMachado@2015.ljmu.ac.ukStudy Supervisor: Dr David McIlroy   Email: D.McIlroy@ljmu.ac.uk First Advisor: Dr. Omer Faruk Ursavas Email: omer.ursavas@erdogan.edu.tr

Appendix G

Survey UK: Night-time use of Electronic Devices, Fear of Missing out, Sleep Difficulties, Anxiety, and Well-being in University Students.

Participant Information Sheet For LJMU STUDENTS

LJMU's Research Ethics Committee Approval Reference: 18/NSP/073

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study Nighttime use of electronic devices, fear of missing out, sleep quality, anxiety and well-being in university students.

School/Faculty: Natural Sciences and Psychology

Name and Contact Details and status of the Principal Investigator: Vanessa Caba Machado, PhD student V.CabaMachado@2015.ljmu.ac.uk

Name and Contact Details of the Supervisory Team:

Dr David Mcllroy D.McIlroy@ljmu.ac.uk

Dr Rebecca Murphy R.C.Murphy@ljmu.ac.uk

Dr Susan Palmer-Conn S.E.Palmer-Conn@ljmu.ac.uk

You are being invited to take part in a research study. Before you decide it is important for you to understand why the study us being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

1.   **What is the purpose of the study?**

The purpose of the study is to explore the relationships between the use of electronic devices at nighttime, sleep quality, feelings related to the desire of keeping up to date on friends' plans,

news and activities, levels of anxiety and overall well-being in university students.

2. Why have I been invited to participate?

You have been invited because you are a university student aged 18 or older. The study will recruit 200 students from LJMU and 200 students from the University of Granada (Spain).

3. Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do you will be given this information sheet. By completing the questionnaire you are agreeing to take part. The survey will take 30-35 minutes to complete. You are still free to withdraw at any time and without giving a reason. A decision to withdraw will not affect your rights. However, data could not be removed once it has been collected, because not email address or personal identifier will be collected the researchers will not be able to identify your data.

4. What will happen to me if I take part?

If you consent to taking part in this research, you will be asked to complete an online survey. This starts with basic demographic questions. Then the survey will display questions about patterns of electronic media devices usage in pre-sleep time, in bed and the presence of the electronic devices in the bedroom while sleeping. Finally, some questions about your levels of sleep quality, anxiety, well-being and the construct of fear of missing out.

5. What are the possible disadvantages and risks of taking part?

There are no intended risks or particular benefits associated with taking part in this research. However, if you think that you need support with anxiety, sleep or well-being issues, you can contact the LJMU Student well-being and mental health support service (email: mentalhealth@ljmu.ac.uk or call: 01512313579).

6. What are the possible benefits of taking part?

There are no particular benefits associated with taking part in this research. However, findings may help researchers to understand how the use of electronic devices at nighttime and the fear

of missing out something are associated with sleep quality, anxiety, subjective well-being.

7.   What will happen to the data provided and how will my taking part in this project be kept confidential?

The information you provide as part of the study is the **research study data**. No personal data will be collected, as data will be collected anonymously and without identifiers. The demographic information you provide (e.g. age, sex) will not be used to identify you, nor will it be passed on to a third party. This information will be used solely for the purpose of data analysis and to understand what kind of people have taken part. All data will be kept by the researchers for a minimum of 5 years before it is destroyed. If you have any general queries, then please contact the researchers:

8.   What will happen to the results of the research project?

The investigator intends to publish the results in a PhD thesis and journal article.

9.   Who is organising the study?

This study is organised by Liverpool John Moores University.

10.   Who has reviewed this study?

This study has been reviewed by, and received ethics clearance through, the Liverpool John Moores University Research Ethics Committee (Reference number: 18/NSP/073).

11.   What if something goes wrong?

If you have a concern about any aspect of this study, please contact the relevant investigator who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how they intend to deal with it. If you wish to make a complaint, please contact the chair of the Liverpool John Moores University Research Ethics Committee (researchethics@ljmu.ac.uk) and your communication will be re-

directed to an independent person as appropriate.

12. Data Protection Notice

The data controller for this study will be Liverpool John Moores University (LJMU). The LJMU Data Protection Office provides oversight of LJMU activities involving the processing of personal data, and can be contacted at secretariat@ljmu.ac.uk. This means that we are responsible for looking after your information and using it properly. LJMU's Data Protection Officer can also be contacted at secretariat@ljmu.ac.uk. The University will process your personal data for the purpose of research. Research is a task that we perform in the public interest.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. You can find out more about how we use your information by contacting secretariat@ljmu.ac.uk.

If you are concerned about how your personal data is being processed, please contact LJMU in the first instance at secretariat@ljmu.ac.uk. If you remain unsatisfied, you may wish to contact the Information Commissioner's Office (ICO). Contact details, and details of data subject rights, are available on the ICO website at: https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals- rights/

16. Contact for further information

Contact Details of Researcher - Vanessa Caba Machado V.CabaMachado@2015.ljmu.ac.uk

Contact Details of Director of Study– Dr David McIlroy D.McIlroy@ljmu.ac.uk

Thank you for reading this information sheet and for considering to take part in this study.

I have read the information sheet provided and I am happy to participate. I understand that by completing and submitting this online questionnaire I am consenting to be part of this research study and for my data to be used as described in the information sheet provided.

◯ I agree

About you

How old are you? (Years)

_____

What gender do you identify with?

◯ Male

◯ Female

◯ Other

◯ Prefer not to say

What is your nationality?

_____

What is your current level of study?

○ Level 3 (foundation)

○ Level 4 (1st year undergraduate)

○ Level 5 (2nd year undergraduate)

○ Level 6 (3rd year undergraduate)

○ Level 7 (PGCERT, PGDIP, Masters)

○ Level 8 (PhD or professional doctorate

What is your current student status?

○ Full-time

○ Part-time

What is your field of study?

_____

Do you have paid employment?

○ Yes

○ No

How many hours per week do you work while you study?

_____

During term time where do you reside?

○ Student accommodation/ halls of residence

○ Privately rented accommodation

○ With parents/ guardians

○ Other

Please, estimate as accurately as possible your gross annual income, including employment income and student loans and bursaries.

_____

The survey will now ask some questions about electronic media devices usage at nighttime. Please, select a response that best describe your general use of electronic devices.

At nighttime, do you have a cut off point to stop using your electronic device or do you keep going until you are too tired to continue?

○ I have a cut off point

○ I keep going until I am too tired

Are you strict at switching your electronic device(s) off at a set time nightly?

○ Never

○ Seldom

○ Sometimes

○ Often

○ Always

How often do you use electronic device(s) (computer, Ipad/tablet, cell phone/smartphone, etc.) nightly in the 2 hours before going to bed?

○ Never

○ Seldom

○ Sometimes

○ Often

○ Always

If you use electronic device(s) in the 2 hours before sleep, how much longer do you use them?

○ 0 minutes

○ 5-15 minutes

○ 15-30 minutes

○ 30-45 minutes

○ 45-60 minutes

○ More than 60 minutes

How often do you use your electronic device(s) while you are already in bed?

○ Never

○ Seldom

○ Sometimes

○ Often

○ Always

If you use electronic device(s) in bed, how much longer do you use them?

○ 0 minutes

○ 5-15 minutes

○ 15-30 minutes

○ 30-45 minutes

○ 45-60 minutes

○ More than 60 minutes

Is your electronic device(s) in the bedroom while you sleep?

○ Never

○ Seldom

○ Sometimes

○ Often

○ Always

Are you likely to go back to your electronic device(s) (because you have forgotten something, or a notification arrives to your devices) right away after you get in bed to sleep?

○ Never

○ Seldom

○ Sometimes

○ Often

○ Always

With reference to checking your electronic device(s), for something other than the time, after waking up in the morning, in what order of priority does this take?

○ First

○ Second

○ Third

○ Fourth

○ Fifth

○ Sixth

○ Seventh

○ After this

Page Break

Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences. Please answer according to what really reflects your experiences rather than what you think your experiences should be. Please treat each item separately from every other item.

I fear others have more rewarding experiences than me.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

I fear my friends have more rewarding experiences than me.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

I get worried when I find out my friends are having fun without me.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

I get anxious when I don't know what my friends are up to.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

It is important that I understand my friends' "in jokes."

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

Sometimes, I wonder if I spend too much time keeping up with what is going on.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

It bothers me when I miss an opportunity to meet up with friends.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

When I have a good time it is important for me to share the details online (e.g. updating status).

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

When I miss out on a planned get-together it bothers me.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

When I go on vacation, I continue to keep tabs on what my friends are doing.

○ Not at all true of me

○ Slightly true of me

○ Moderately true of me

○ Very true of me

○ Extremely true of me

The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions. During the past month...

When have you usually gone to bed?

_____

How long (in minutes) has it taken you to fall asleep each night?

_____

When have you usually gotten up in the morning?

_____

How many hours of actual sleep do you get at night? (This may be different than the number of hours you spend in bed)

_____

During the past month, how often have you had trouble sleeping because you…

Cannot get to sleep within 30 minutes

○ Not during the past month

○ Less than once a week

○ Once or twice a week

○ Three or more times a week

Wake up in the middle of the night or early morning

   ○ Not during the past month

   ○ Less than once a week

   ○ Once or twice a week

   ○ Three or more times a week

Have to get up to use the bathroom

   ○ Not during the past month

   ○ Less than once a week

   ○ Once or twice a week

   ○ Three or more times a week

Cannot breathe comfortably

   ○ Not during the past month

   ○ Less than once a week

   ○ Once or twice a week

   ○ Three or more times a week

Cough or snore loudly

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

Feel too cold

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

Feel too hot

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

Have bad dreams

    ○ Not during the past month

    ○ Less than once a week

    ○ Once or twice a week

    ○ Three or more times a week

Have pain

    ○ Not during the past month

    ○ Less than once a week

    ○ Once or twice a week

    ○ Three or more times a week

Other reason(s), please describe:

_____

How often you have had trouble sleeping because of the reason(s) described before?

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

During the past month, how often have you taken medicine (prescribed or "over the counter") to help you sleep?

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

◯ Not during the past month

◯ Less than once a week

◯ Once or twice a week

◯ Three or more times a week

During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?

   ○ Not during the past month

   ○ Less than once a week

   ○ Once or twice a week

   ○ Three or more times a week

During the past month, how would you rate your sleep quality overall?

   ○ Very good

   ○ Fairly good

   ○ Fairly bad

   ○ Very bad

End of Block: Block 4

Start of Block: Block 5

Below are five statements that you may agree or disagree with. Indicate your agreement with each item. Please be open and honest in your responding.

In most ways my life is close to my ideal.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

The conditions of my life are excellent.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

I am satisfied with my life.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

So far I have gotten the important things I want in life.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

If I could live my life over, I would change almost nothing.

○ Strongly disagree

○ Disagree

○ Slightly disagree

○ Neither agree nor disagree

○ Slightly agree

○ Agree

○ Strongly agree

Page Break

Indicate how often each of the statements below is descriptive of you.

How often do you feel that you are "in tune" with the people around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you lack companionship?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there is no one you can turn to?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel alone?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel part of a group of friends?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you have a lot in common with the people around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that you are no longer close to anyone?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that your interests and ideas are not shared by those around you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel outgoing and friendly?

    ◯ I never feel this way

    ◯ I rarely feel this way

    ◯ I sometimes feel this way

    ◯ I often feel this way

How often do you feel close to people?

    ◯ I never feel this way

    ◯ I rarely feel this way

    ◯ I sometimes feel this way

    ◯ I often feel this way

How often do you feel left out?

    ◯ I never feel this way

    ◯ I rarely feel this way

    ◯ I sometimes feel this way

    ◯ I often feel this way

How often do you feel that your relationships with others are not meaningful?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that no one really knows you well?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel isolated from others?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel you can find companionship when you want it?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there are people who really understand you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel shy?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that people are around you but not with you?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there are people you can talk to?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

How often do you feel that there are people you can turn to?

○ I never feel this way

○ I rarely feel this way

○ I sometimes feel this way

○ I often feel this way

Page Break

Please think about what you have been doing and experiencing during the past four weeks. Then report how much you experienced each of the following feelings, using the scale below.

Positive

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Negative

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Good

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Bad

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Pleasant

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Unpleasant

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Happy

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Sad

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Afraid

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Joyful

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Angry

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

Contented

○ Very Rarely or Never

○ Rarely

○ Sometimes

○ Often

○ Very Often or Always

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

There is a special person who is around when I am in need.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

There is a special person with whom I can share joys and sorrows.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My family really tries to help me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I get the emotional help and support I need from my family.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I have a special person who is a real source of comfort to me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My friends really try to help me.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can count on my friends when things go wrong.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can talk about my problems with my family.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I have friends with whom I can share my joys and sorrows.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

There is a special person in my life who cares about my feelings.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

My family is willing to help me make decisions.

○ Very Strongly Disagree

○ Strongly Disagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

I can talk about my problems with my friends.

○ Very Strongly Disagree

○ Strongly DIsagree

○ Mildly Disagree

○ Neutral

○ Mildly Agree

○ Strongly Agree

○ Very Strongly Agree

A number of statements which people have used to describe themselves are given below. Read each statement and choose the most appropriate answer below the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

I feel pleasant.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I tire quickly.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I feel like crying.

○ Almost never

○ Smetimes

○ Often

○ Almost Always

I wish I could be happy as others seem to be.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am loosing out on things because I can't make up my mind soon enough.

○ Strongly agree

○ Agree

○ Somewhat agree

○ Neither agree nor disagree

○ Somewhat disagree

○ Disagree

○ Strongly disagree

I feel rested.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am calm, cool and collected.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I feel that difficulties are pilling up so that I cannot overcome them.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I worry too much over something that really doesn't matter.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am happy.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am inclined to take things hard.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I lack self-confident.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I feel secure.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I try to avoid facing a crisis or difficulty.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I feel blue/depressed.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am content.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

Some unimportant thought runs through my mind and bothers me.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I take disappointments so keenly that I can't put them out of my mind.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I am a steady person.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

I get in a state of tension or turmoil as I think over my recent concerns and interests.

○ Almost never

○ Sometimes

○ Often

○ Almost Always

A number of statements which people have used to describe themselves are given below. Read each statement and choose the most appropriate answer below the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

I feel calm

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am secure

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am tense

◯ Not at all

◯ Somewhat

◯ Moderately so

◯ Very much so

I am regretful

◯ Not at all

◯ Somewhat

◯ Moderately so

◯ Very much so

I feel at ease

◯ Not at all

◯ Somewhat

◯ Moderately so

◯ Very much so

I feel upset

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am presently worrying about possible misfortunes

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel rested

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel anxious

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel comfortable

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel self-confident

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel nervous

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am jittery

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel "high strung"

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am relaxed

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel content

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I am worried

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel over-excited and rattled

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel joyful

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

I feel pleasant

○ Not at all

○ Somewhat

○ Moderately so

○ Very much so

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Debriefing sheet

Please read the information below about this study, then press the ">>" bottom of this page to submit your responses.

Thank you for participating in this study. Please feel free to contact the researcher using the details below if you have any further questions.

This study was an investigation about how electronic devices usage affects sleep. Poor quality of sleep is a significant issue for students and has a detrimental effect on mental health and well-being (Brown, Qin & Esmail, 2017; Augner, 2011). In relation to technology and social media usage, research has demonstrated the relationships between sleep deficiency, high rates of social media use and anxiety (Afandi et al., 2013). However, there is not enough evidence in this area of research and more studies are needed. Thus, by assessing patterns of electronic devices usage at night time (before going to bed, in bed, behaviour of keeping the device into the bedroom while sleeping) and use at waking up time (prioritization of checking electronic device(s)), this study aimed to examine the relationships between these patterns of use and quality of sleep. Moreover, this study examined the relationships between the former mentioned patterns of technology use and quality of sleep, and the relatively modern concept of "the fear of missing out" (FOMO), which is viewed as one of the psychological origins of users for being permanently and constantly connected to electronic devices (Vorderer et al., 2016). Ultimately, levels of anxiety and well-being were assessed.

THANK YOU AGAIN FOR YOUR PARTICIPATION

Study Researcher: Vanessa Caba Machado   Email: V.CabaMachado@2015.ljmu.ac.uk

Study Supervisor: Dr David McIlroy   Email: D.McIlroy@ljmu.ac.uk

Appendix H

Survey Spain: Night-time use of Electronic Devices, Fear of Missing out, Sleep Difficulties, Anxiety, and Well-being in University Students.

HOJA DE INFORMACIÓN Y CONSENTIMIENTO   *NOMBRE DE LA INVESTIGACIÓN: Uso nocturno de los dispositivos electrónicos: miedo a perderse algo, calidad del sueño, ansiedad y bienestar en estudiantes universitarios.*

Profesor Responsable: Dr David McIlroy (Ciencias Naturales y Psicología, Liverpool John Moores University) Email: D.McIlroy@ljmu.ac.uk   Alumno Responsable: Vanessa Caba Machado   Email: V.CabaMachado@2015.ljmu.ac.uk

Información   En el presente estudio se examinan las relaciones entre el uso de los dispositivos electrónicos por la noche, la ansiedad, el miedo a perderse algo, la calidad del sueño, y el bienestar. El estudio constará de la compleción de un cuestionario online de aproximadamente 35 minutos de duración. Las preguntas tratan sobre el uso de diversos dispositivos electrónicos por la noche, además se incluyen preguntas acerca del sueño, el bienestar general y la ansiedad. Su participación será recompensada con una papeleta experimental. Además, se espera que esta investigación contribuya a entender cómo el uso de las tecnologías está asociado con importantes aspectos de nuestras vidas. No hay riegos potenciales asociados con la compleción de este cuestionario. No obstante, es importante que sepa que su participación es voluntaria y en cualquier caso puede abandonar el experimento sin que por ello se le penalice, y sin necesidad de tener que dar explicaciones. De acuerdo a la Ley 15/1999 de Protección de Datos de Carácter Personal, los datos personales que se le requieren (p.ej. edad, sexo, etc) son los necesarios para cubrir los objetivos del estudio. Cualquier información de carácter personal que pueda ser identificable será conservada y procesada por medios informáticos en condiciones de seguridad. El acceso a dicha información quedará restringido al personal de investigación autorizado que estará obligado a mantener la confidencialidad de la información. De acuerdo con la ley vigente, tiene usted derecho al acceso de sus

datos personales; asimismo, y si está justificado, tiene derecho a su rectificación y cancelación. Si así lo desea, deberá solicitarlo al investigador de este estudio.

Consentimiento: Acepto participar en el estudio arriba descrito que lleva a cabo bajo la supervisión del Departamento de Psicología Experimental de la Universidad de Granada. He tomado esta decisión basándome en la información que se me ha proporcionado por escrito y he tenido la oportunidad de recibir la información adicional que he solicitado. Entiendo que puedo retirar este consentimiento en cualquier momento sin recibir una penalización por ello. Y que toda información presente en este estudio será manejada de forma confidencial. Si tienes algún comentario relacionado con la organización de esta investigación u otra llevada a cabo por el Departamento de Psicología Experimental, escribe a la siguiente dirección:

experimental@ugr.es

○ Acepto (para pasar a la pantalla siguiente y responder el cuestionario ha de clicar en la casilla)

End of Block: Default Question Block

Start of Block: Block 1

Sobre ti

Género

○ Hombre

○ Mujer

Edad

Nacionalidad

_____

¿En qué curso estás matriculado/a?

○ 1º

○ 2º

○ 3º

○ 4º

○ 5º

○ Posgrado

Modalidad de curso:

○ Tiempo completo

○ Tiempo parcial

¿Qué titulación estudias?

_____

Empleo:

○ Si

○ No

Si dispones de empleo mientras cursas tus estudios por favor responde a la siguiente pregunta: ¿De cuántas horas a la semana es tu empleo?

_____

Residencia durante el curso:

○ Residencia de estudiantes

○ Vivienda de alquiler

○ Vivienda de los padres

○ Otra

Por favor, indica lo más exactamente posible tus ingresos anuales, incluyendo salario de empleo y/o becas de estudiante.

_____

A continuación se te presentarán una serie de preguntas sobre el uso que haces de tus dispositivos electrónicos por la noche. Por favor, selecciona la respuesta que mejor describe de forma general ese uso.

Por la noche, ¿tienes una hora límite establecida a la que paras de usar tu dispositivo electrónico o sigues usándolo hasta que te lo impide el cansancio?

○ Horario establecido

○ Sigo usándolo hasta que me lo impide el cansancio.

¿Eres estricto en tu decisión de apagar tu dispositivo electrónico a una hora fija cada noche?

○ Nunca

○ Raramente

○ A veces

○ A menudo

○ Siempre

¿Con qué frecuencia usas tus dispositivos electrónicos (ordenador, Ipad/Tablet, móvil, smartphone, etc.) cada noche en las 2 horas previas de irte a la cama?

○ Nunca

○ Raramente

○ A veces

○ A menudo

○ Siempre

Si usas tus dispositivos electrónicos en las 2 horas previas de irte a la cama, ¿durante cuánto tiempo los usas?

○ 0 minutos

○ 5-15 minutos

○ 15-30 minutos

○ 30-45 minutos

○ 45-60 minutos

○ Más de 1 hora

¿Con qué frecuencia usas tus dispositivos electrónicos mientras estás ya en la cama?

○ Nunca

○ Raramente

○ A veces

○ A menudo

○ Siempre

Si usas tus dispositivos electrónicos dentro de la cama, ¿durante cuánto tiempo los usas?

○ 0 minutos

○ 5-15 minutos

○ 15-30 minutos

○ 30-45 minutos

○ 45-60 minutos

○ Más de 1 hora

¿Están tus dispositivos electrónicos dentro de la habitación mientras duermes?

○ Nunca

○ Raramente

○ A veces

○ A menudo

○ Siempre

¿Es probable que cojas tus dispositivos electrónicos de nuevo (porque has olvidado algo, o porque te llega una notificación) una vez que estás dentro de la cama para dormir?

○ Nunca

○ Raramente

○ A veces

○ A menudo

○ Siempre

Tratándose de usar tus dispositivos electrónicos, para algo distinto que comprobar la hora, justo después de despertarte por la mañana, ¿qué orden de prioridad ocupa esta actividad con respecto a otras actividades matutinas?

○ Primero

○ Segundo

○ Tercero

○ Cuarto

○ Quinto

○ Sexto

○ Séptimo

○ Después del séptimo

A continuación, encontrarás unas afirmaciones sobre tu experiencia del día a día. Por favor indica en qué medida se ajustan estas afirmaciones a ti, dada tu experiencia en general. Por favor, responde aquello que realmente refleje tu experiencia y no lo que piensas sobre cómo debería ser tu experiencia. Por favor, considera cada pregunta sin tener en cuenta el resto.

A veces me pregunto si dedico demasiado tiempo a estar pendiente de lo que está pasando.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Cuando me pierdo una reunión entre amigos, me molesta.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Cuando voy de vacaciones, sigo pendiente de lo que mis amigos están haciendo.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Me preocupo cuando me entero de que mis amigos se lo están pasando bien sin mí.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Me pongo nervioso cuando no sé qué están haciendo mis amigos.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Me da miedo que mis amigos tengan experiencias más gratificantes que yo.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Es importante para mí que entienda las bromas que se hacen entre mis amigos.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Me molesta cuando pierdo una oportunidad de quedar con amigos.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Me da miedo que otras personas tengan experiencias más gratificantes que yo.

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Cuando me lo paso bien, es importante para mí compartir los detalles en línea (p.ej. actualizando el estatus).

○ Nada

○ Un poco

○ Moderadamente

○ Bastante

○ Mucho

Las siguientes cuestiones hacen referencia a tus hábitos de sueño sólo durante el último mes. Tus respuestas deben reflejar fielmente lo ocurrido la mayoría de días y noches del último mes. Por favor contesta a todas las preguntas.

Durante el último mes, ¿a qué hora solías acostarte por la noche?

_____

Durante el último mes, ¿cuánto tiempo (en minutos) te ha costado quedarte dormido después de acostarte por las noches?

_____

Durante el último mes, ¿a qué hora te has levantado habitualmente por la mañana?

_____

Durante el último mes, ¿cuántas horas de sueño real has mantenido por las noches? (puede ser diferente del número de horas que estuviste acostado).

_____

Para cada una de las cuestiones siguientes, selecciona la respuesta más adecuada a tu situación.   Durante el último mes, ¿con qué frecuencia has tenido un sueño alterado a consecuencia de....?

a) no poder conciliar el sueño después de 30 minutos de intentarlo:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

b) despertarse en mitad de la noche o de madrugada:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

c) tener que ir al baño:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

d) no poder respirar adecuadamente:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

---

e) tos o ronquidos:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

---

f) sensación de frío:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

---

g) sensación de calor:

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

h) pesadillas

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

i) sentir dolor

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

j) otra causa(s), por favor descríbela...

_____

¿Con qué frecuencia has tenido un sueño alterado a consecuencia de este problema o causa que has indicado?

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

Durante el último mes, ¿cómo calificarías, en general, la calidad de tu sueño?

○ Bastante buena

○ Buena

○ Mala

○ Bastante mala

Durante el último mes, ¿con qué frecuencia tuviste que tomar medicinas (prescritas o automedicadas) para poder dormir?

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

Durante el último mes, ¿con qué frecuencia tuviste dificultad para mantenerte despierto mientras conducías, comías o desarrollabas alguna actividad social?

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

Durante el último mes, ¿cómo de problemático ha resultado para ti el mantener el entusiasmo por hacer las cosas?

○ No me ha ocurrido durante el último mes

○ Menos de una vez a la semana

○ Una o dos veces a la semana

○ Tres o más veces a la semana

Más abajo hay cinco afirmaciones con las que puedes estar de acuerdo o en desacuerdo. Utilizando la siguiente escala que se te presenta, indica tu acuerdo con cada una. Por favor, responde a las preguntas abierta y sinceramente.

En la mayoría de las cosas, mi vida está cerca de mi ideal.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Mis condiciones de vida son excelentes.

◯ Completamente en desacuerdo

◯ En desacuerdo

◯ Más bien en desacuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ Más bien de acuerdo

◯ De acuerdo

◯ Completamente de acuerdo

Estoy satisfecho con mi vida.

◯ Completamente en desacuerdo

◯ En desacuerdo

◯ Más bien en desacuerdo

◯ Ni de acuerdo ni en desacuerdo

◯ Más bien de acuerdo

◯ De acuerdo

◯ Completamente de acuerdo

Hasta ahora, he conseguido las cosas que para mí son importantes en la vida.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Si volviese a nacer, no cambiaría casi nada de mi vida.

○ Completamente en desacuerdo

○ En desacuerdo

○ Más bien en desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Más bien de acuerdo

○ De acuerdo

○ Completamente de acuerdo

Las siguientes frases describen cómo se siente a veces la gente. Indica con qué frecuencia cada frase describe la forma en que te sientes.

¿Con qué frecuencia sientes que la gente que te rodea te entiende?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que te falta compañía?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que no hay nadie a quien puedas pedir ayuda?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia te sientes solo/a?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que formas parte de un grupo de amigos/as?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que tienes mucho en común con la gente que te rodea?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que ya no tienes a nadie cerca de ti?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que tus intereses e ideas no son compartidos por quienes te rodean?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que eres una persona sociable y amistosa?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia te sientes cercano a las personas?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia te sientes excluido?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que tus relaciones sociales no son significativas?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que nadie te conoce realmente bien?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia te sientes aislado/a de los demás?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que puedes encontrar compañía cuando lo deseas?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que hay personas que realmente te comprenden?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia te sientes tímido?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que tienes personas alrededor, pero que no están contigo?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que hay personas con quien puedes hablar?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

¿Con qué frecuencia sientes que hay personas con las que puedes contar?

○ Nunca me siento de ese modo

○ Raramente me siento así

○ Me siento así con frecuencia

○ Me siento así a menudo

End of Block: Block 6

Start of Block: Block 7

Piensa en lo que has hecho y experimentado en las últimas cuatro semanas. Evalúa qué tipo de sentimientos has experimentado siguiendo la escala que se te presenta.   En las últimas cuatro semanas he tenido sentimientos…

Positivos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Negativos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Buenos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Malos

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Agradables

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Desagradables

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Felices

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Tristes

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De miedo

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

Alegres

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De enfado

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

De satisfacción

○ Muy raramente o nunca

○ Raramente

○ A veces

○ A menudo

○ Muy a menudo o siempre

End of Block: Block 7

Start of Block: Block 8

A continuación se te presentan una serie de afirmaciones. Lee cada afirmación atentamente e indica cómo te sientes sobre cada afirmación.

Cuando necesito algo, sé que hay alguien que me puede ayudar.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Cuando tengo penas o alegrías, hay alguien que me puede ayudar.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Tengo la seguridad de que mi familia trata de ayudarme.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Mi familia me da la ayuda y apoyo emocional que requiero.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Hay una persona que me ofrece consuelo cuando lo necesito.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Tengo la seguridad de que mis amigos tratan de ayudarme.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo contar con mis amigos cuando tengo problemas.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo conversar de mis problemas con mi familia.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Cuando tengo alegrías o penas puedo compartirlas con mis amigos.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Hay una persona que se interesa por lo que yo siento.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Mi familia me ayuda a tomar decisiones.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

Puedo conversar de mis problemas con mis amigos.

○ Muy fuertemente en desacuerdo

○ Fuertemente en desacuerdo

○ Ligero desacuerdo

○ Ni de acuerdo ni en desacuerdo

○ Ligeramente de acuerdo

○ Fuertemente de acuerdo

○ Muy fuertemente de acuerdo

End of Block: Block 8

Start of Block: Block 9

A continuación encontrarás unas frases que se utilizan corrientemente para describirse uno a sí mismo. Lee cada frase y señala la respuesta que indique mejor <u>cómo te sientes en general, en la mayoría de las ocasiones</u>. No hay respuestas buenas ni malas. No emplees demasiado tiempo en cada frase y contesta señalando la respuesta que mejor describa tu situación presente.

Me siento bien

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me canso rápidamente

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Siento ganas de llorar

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me gustaría ser tan feliz como otros

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Pierdo oportunidades por no decidirme pronto

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento descansado

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy una persona serena, tranquila, sosegada

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Veo que las dificultades se amontonan y no puedo con ellas

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me prepocupo demasiado por cosas sin importancia

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy feliz

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Suelo tomar las cosas demasiado seriamente

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me falta confianza en mí mismo

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento seguro

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

No suelo afrontar las crisis o dificultades

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me siento triste (melancólico)

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Estoy satisfecho

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me rondan y molestan pensamientos sin importancia

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Me afectan tanto los desengaños que no puedo afrontarlos

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Soy una persona estable

○ Casi nunca

○ A veces

○ A menudo

○ Casi siempre

Cuando pienso sobre asuntos y preocupaciones actuales me pongo tenso y agitado

○ Casi siempre

○ A veces

○ A menudo

○ Casi siempre

A continuación encontrarás unas frases que se utilizan corrientemente para describirse uno a sí mismo. Lee cada frase y señala la respuesta que indique mejor <u>cómo te sientes ahora mismo</u>, <u>en este momento</u>. No hay respuestas buenas ni malas. No emplees demasiado tiempo en cada frase y contesta señalando la respuesta que mejor describa su situación presente.

Me siento calmado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento seguro

○ Nada

○ Algo

○ Bastante

○ Mucho

Estoy tenso

○ Nada

○ Algo

○ Bastante

○ Mucho

Estoy contrariado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento cómodo (estoy a gusto)

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento alterado

- ◯ Nada

- ◯ Algo

- ◯ Bastante

- ◯ Mucho

Estoy preocupado ahora por posibles desgracias futuras

- ◯ Nada

- ◯ Algo

- ◯ Bastante

- ◯ Mucho

Me siento descansado

- ◯ Nada

- ◯ Algo

- ◯ Bastante

- ◯ Mucho

Me siento angustiado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento cómodo

○ Nada

○ Algo

○ Bastante

○ Mucho

Tengo confianza en mí mismo

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento nervioso

○ Nada

○ Algo

○ Bastante

○ Mucho

Estoy desasosegado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento muy atado (como oprimido)

○ Nada

○ Algo

○ Bastante

○ Mucho

Estoy relajado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento satisfecho

○ Nada

○ Algo

○ Bastante

○ Mucho

Estoy preocupado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento aturdido y sobreexcitado

○ Nada

○ Algo

○ Bastante

○ Mucho

Me siento alegre

○ Nada

○ Algo

○ Bastante

○ Mucho

En este momento me siento bien

◯ Nada

◯ Algo

◯ Bastante

◯ Mucho

Para poder recoger la papeleta experimental por favor escribe los datos siguientes:

DNI completo con letra:

_____

Dirección de correo electrónico:

_____

HOJA DE INFORMACIÓN   *NOMBRE DEL ESTUDIO: Uso nocturno de los dispositivos electrónicos: miedo a perderse algo, calidad del sueño, ansiedad y bienestar en estudiantes universitarios.*

Dr David McIlroy (Ciencias Naturales y Psicología, Liverpool John Moores University) Email: D.McIlroy@ljmu.ac.uk

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¡Gracias por participar en este estudio!   Breve descripción del propósito de este experimento: *Los nuevos avances tecnológicos, móviles, redes sociales y diversas aplicaciones se han convertido en una parte importante del día a día de la sociedad actual. Sin embargo, los estudiantes se han convertido en los usuarios más activos y entusiasmados de las nuevas tecnologías. El objetivo de esta investigación es examinar las relaciones entre el uso de los dispositivos electrónicos por la noche, la ansiedad, el bienestar, el miedo a perderse algo, y la calidad de sueño. Este estudio se está llevando a cabo en dos países: Reino Unido y España. Para conseguir los*

objetivos del estudio, los investigadores han reunido una serie de preguntas en un cuestionario online. Se espera que los resultados obtenidos contribuyan al desarrollo de modelos teóricos y estrategias de intervención que permitan facilitar un uso adaptativo de la tecnología para incrementar la calidad de vida, bienestar y salud mental de nuestra sociedad. Si considera que tiene problemas de ansiedad, sueño o bienestar, y necesita ayuda puede ponerse en contacto con los Servicios de Atención Psicológica de la UGR (958240940; email: sapsico@ugr.es; Lunes y jueves de 16 a 20. Martes, miércoles y Viernes de 10 a 14).

Si tiene algún comentario o duda relacionada con este estudio puede consultarla en la dirección de email de los siguientes investigadores:
Vanessa Caba Machado V.CabaMachado@2015.ljmu.ac.uk Dra Francisca M. Padilla Adamuz fpadilla@ugr.es

Appendix I

List of Developed Items

Well-being Perceptions Scale

Please select a response to indicate how much you agree or disagree with each statement.

(Very Strongly Agree, Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree, Very Strongly Disagree)

1. After using social networks I feel happier.

2. Spending time using any device adds to my quality of life.

3. Spending time using social networks adds to my quality of life.

4. Using social networks makes me feel satisfied with myself.

5. Using any electronic device makes me feel satisfied with myself.

6. Spending time on internet or social networks depresses my mood.

7. Using social networks makes me feel less satisfied with my life.

8. Using any electronic device makes me feel less satisfied with my life.

Anxiety Perceptions Scale

Please select a response to indicate how much you agree or disagree with each statement.

(Very Strongly Agree, Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree, Very Strongly Disagree)

1. Spending too much time using any electronic device (mobile phone, laptop, desktop, etc.) will make me feel anxious.

2. I get anxious during an academic task if I get distracted by electronic devices.

3. Seeing lots of different news and information online initiates feelings of anxiety in me.

4. Receiving messages of people through different social networks initiates feelings of anxiety in me.

5. Receiving messages of people through my electronic devices initiates feelings of anxiety in me.

6. I feel a pressure to answer messages immediately.

7. My attempt to relieve academic anxiety by turning to technology use does not work for me.

Social Comparison Scale

Please select a response to indicate how much you agree or disagree with each statement.

(Very Strongly Agree, Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree, Very Strongly Disagree)

1. When on social networks I compare my accomplishments with those of others.

2. People I see on social networks seem to have better lives than me.

3. Browsing other people's social network profiles creates a pressure on me to have a perfect profile.

4. On social networks I compare how I am doing socially (e.g. social skills, popularity) with other people.