



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

ARCHIVIO ISTITUZIONALE
DELLA RICERCA

Alma Mater Studiorum Università di Bologna
Archivio istituzionale della ricerca

Mind the Age Gap! How Problematic Internet Use Affects Adults' and Emerging Adults' Well-Being and Prosocial Consumer Behavior

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Francesco Raggiotto, E.M. (2023). Mind the Age Gap! How Problematic Internet Use Affects Adults' and Emerging Adults' Well-Being and Prosocial Consumer Behavior. JOURNAL OF INTERACTIVE MARKETING, 58(2-3), 268-279 [10.1177/10949968231155803].

Availability:

This version is available at: <https://hdl.handle.net/11585/917936> since: 2024-06-13

Published:

DOI: <http://doi.org/10.1177/10949968231155803>

Terms of use:

Some rights reserved. The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>).
When citing, please refer to the published version.

(Article begins on next page)

Mind the age gap! How problematic Internet use affects the well-being of adults' and emerging adults' prosocial consumer behavior.

Abstract

While most has been reported about the negative consequences of the pervasive presence of information and communications technologies in consumers' everyday lives, the present research enriches the literature on Problematic Internet Use (PIU) applying the Cognitive Behavioral Model into a consumer context, creating a bridge between marketing and psychology research, with novel insights and directions for future research. By means of a moderated mediation model tested on hundreds of consumers, we explore whether PIU would influence well-being through the mediation of prosocial consumer behavior, and the moderation of online-social support. Our results show that PIU can indirectly affect individual well-being by affecting consumer choice. Managerial and theoretical implications are addressed.

Keywords: well-being, emerging adults, adults, problematic Internet use, online social support, prosocial consumer behavior

Introduction

Prosocial behaviors hold remarkable importance at multiple levels: for instance, from a societal viewpoint, they are key to transitioning to more sustainable models of development (e.g., circular economy, Ma et al., 2022). More importantly, prosocial consumer behaviors hold critical significance when it comes to consider individual well-being: prior consumer research points them as powerful determinants of consumers' well-being (e.g., Kadic-Maglajlic & Kumar, 2022), because of their ability to foster several positive outcomes (such as emotional stability, Venhoeven et al., 2020; improved interpersonal relationships and self-

growth, Bauer et al., 2019). It is, therefore, not surprising that recent research (e.g., Rapert et al., 2021; Berli-Kiss & Menrad, 2022) has called for developing new knowledge about the antecedents and consequences of these consumer behaviors.

The present study tackles this issue by exploring prosocial consumer behaviors as antecedents of individual well-being, investigating if (and how) internet use affects the extent to which individuals engage (or not) in such behaviors (thus affecting consumer well-being). Prior research has examined internet use and prosocial consumer behaviors often “separately but rarely together” (Cano Murillo et al., 2016, p. 626): however, without considering that they are both relevant drivers of individual well-being. While on the one hand, prosocial consumer behaviors are positively related to individual well-being, on the other hand, internet use has often been negatively associated with it. These adverse effects are usually put under the umbrella of Problematic Internet Use (PIU). Nowadays’ ubiquitous exposure to internet-based devices, technologies, and applications has increased the risk that individuals develop PIU, hampering their well-being by favoring the insurgence of aggressive states, anxiety, and social isolation (e.g., Kuss & Lopez-Fernandez, 2016). However, PIU’s effects on marketing-related outcomes (including prosocial consumer behaviors) are still largely unknown, and extant findings are contradictory or fragmented. For instance, in some studies, PIU has been related to compulsive consumer behaviors (e.g., Aslanbay et al., 2009); others, instead, found no correlation between PIU and purchasing behaviors (e.g., Bridges & Florsheim, 2008). Hence, the present research builds upon insights from psychology and marketing research to explore how PIU (which, alone, is likely to exert adverse effects on consumer well-being) may affect individual engagement in prosocial consumer behaviors (i.e., a potential driver of individual well-being). In other words, the present study advances that PIU indirectly affects well-being by influencing individual consumption behaviors. More specifically, it proposes

that PIU discourages prosocial consumption behaviors, thus indirectly lowering consumers' well-being.

In doing so, the present research is driven by some goals. First, it aims at contributing to marketing research on prosocial consumer behaviors as antecedents of individual well-being. Second, it aims to contribute to the debate on the role of internet usage in shaping individual prosocial consumer behaviors. Furthermore, in examining the relationship between PIU and prosocial consumer behavior, the present study accounts for the fact that, according to prior research, different kinds of consumers relate to technology differently. This suggestion is of particular interest for the purposes of this study, when considering that a major target market for prosocial consumer behavior is the one of emerging adults (i.e., consumers aged 18-29 y.o.) (e.g., Forbes, 2021). Indeed, these consumers are denoted by a specific relation with technology, different from other customer segments, being identified as “digital natives”, for which the internet component of their life is rooted in their personal and social development since their early life stages. Hence, the present study tests the proposed framework in two consumer groups: emerging adults (18-29 y.o.) and adults (>30 y.o.).

Theoretical background and hypotheses development

Emerging adult consumers represent a key segment for scholars and practitioners; as such, marketing research has recently developed increasing attention toward them. However, marketing research on such consumers still appears in its infancy, while literature in psychology has abundantly highlighted that adults and emerging adults exhibit different behaviors and mental processes (Berk, 2017). Much less is known about a) the possible impacts of technology use on their consumption behavior and b) whether emerging adults' consumer behaviors positively reflect on their well-being.

Because this research proposes that the direct relationship between PIU and well-being may vary according to different consumer ages., we open the theoretical background with a brief definition of adults and emerging adults from psychology literature.

Despite some disagreement in psychology on the definition of adults, results from studies conducted in different countries have been remarkably similar in showing that typical markers of the transition to adulthood were (1) accepting responsibility for oneself, (2) making independent decisions, and (3) becoming financially independent (e.g.: United States, Arnett, 2018; Nelson, 2003; Europe: Corijn & Klijzing, 2013). These three criteria are stable not only across cultures and nations but also across ethnic groups, and social classes (Arnett, 2018, 2020). In most developed countries, they are usually first met at the age of 30 years, which psychologists agree in considering the threshold for adulthood (Arnett & Mitra, 2020). Instead, emerging adulthood is “[..] *a time for looking back and looking forward, from the liminal vantage point of dwelling in-between defined life roles [..]*” (Tribble, 2015, p. 3). No longer a child, but not yet fully adult, the emerging adult goes through a range of emotions and experiences. Arnett (2000) first proposed the theory of emerging adulthood and since then, emerging adults are considered those covering the age range from 18 to 29. This age span covers emerging adults’ five characteristic features (Arnett, 2018; Reifman et al., 2007): 1) *identity exploration* (young people deciding who they are and what they want out of work, school, and love); 2) *instability* (residence changes due to school, romantic partners, or families and career dynamics); 3) *self-focus* (little to no constraints of marriage, children and a career); 4) *feeling in-between* (taking responsibility for oneself, but still do not completely feel like an adult); 5) *multiple possibilities* (their future not being already set, educational, professional, and family patterns still in full development).

The relationship between age, Problematic Internet Use, and well-being

Problematic Internet Use (PIU) was defined by Shapira and colleagues (2000) as a clinically important syndrome associated with distress, functional impairment, and psychiatric disorder. It is associated with 'Internet addiction', based on the DSM-IV definition of substance dependence and pathological gambling, respectively (see Young, 1998; Young & Rogers, 1998). It entails a "psychological dependence on the Internet and is characterized by (1) an increasing investment of resources on Internet-related activities, (2) unpleasant feelings (e.g., anxiety, depression, emptiness) when offline, (3) an increasing tolerance to the effects of being online, and (4) denial of the problematic behaviors" (Kandell, 1998, p. 11). The Internet addiction perspective characterizes PIU as a behavioral addiction similar in character to other impulse control disorders, such as gambling (Beard & Wolf, 2001).

Several facets and measurement instruments have been proposed for PIU since Shapira and colleagues' definition (Shapira et al., 2000). In line with the aims of the present research, we refer to the conceptualization of PIU as in the Cognitive Behavioral Model theory, as it specifically relates PIU to well-being. In particular, it suggests that PIU involves cognitive processes as well as dysfunctional behaviors, which result in negative consequences on individuals' lives (Davis, 2001). In this cognitive-behavioral model, PIU is defined as 'Pathological Internet Use', a multidimensional syndrome consisting of cognitive, emotional, and behavioral symptoms, which lead to difficulties in managing one's offline life (Fioravanti et al., 2013). In this model, PIU can be divided into specific PIU (SPIU), the overuse of content-specific functions of the Internet (e.g., gambling and viewing sexual material), and generalized PIU (GPIU), which happens when a person develops problems because of the exclusive communicative context of the Internet. The cognitive-behavioral model integrates risk factors, psychological processes, and consequences related to PIU. It posits that the association of certain situational cues (e.g., life stressors) with psychopathology could result in problematic behavior.

The literature suggests that the relationship with technology of adults and emerging adults varies not just in terms of mere usage but in terms of a general attitude towards technologies, devices, and applications. Specifically, adults have been labeled as “digital immigrants” (Prensky, 2001), in that they are born far before the widespread usage of technology and devices.

Adults have been shown to use the Internet to perform specific tasks, mostly job-related tasks (Griffith, 2010), shopping tasks (Müller, Joshi, & Thomas, 2022), and socializing (e.g., Bonomo et. Al., 2015). It is worth noting that, particularly following the recent pandemic, the use of the Internet has assumed a central role in most adults' lives, first and foremost, becoming essential to work performance. Moreover, for the adult population, such continuative usage has positively impacted their construction processes of social connections (Hunsaker & Hargittai, 2018). Adults tend to have a clear distinction between their online and offline network of relationships: in this vein, it is reasonable to expect that the absence of the offline component of adults' network of relationships may have been fully compensated by the online component: as a result, recent studies have reported that the massive use of the Internet for adults has positively influenced their health and well-being (Szabo et al., 2019). Notably, extant research reported that some Internet-based activities (e.g., development of social relationships) might be denoted by a reinforcing nature, which might lead to the development of a conditioned response every time the user is in contact with a given situational cue. Examples in this sense are cognitions such as “I am worthless offline, but I am someone online”, or “The Internet is my only friend”. Notably, these cognitions are both facilitating and/or reinforcing factors of either GPIU or SPIU use.

Hence, we propose that in adult consumers, because of their specificities and some contextual conditions, PIU may provide a positive effect in terms of well-being.

Formally:

H1a: Problematic Internet Use has a positive, direct effect on the well-being of adult consumers.

Instead, how emerging adults approach and use technology (including Internet-based technology) is likely to differ from adult consumers. Unlike adults, since their early stages of development (i.e., early childhood, Berk, 2017) the usage of technological tools is part of their everyday life: in this sense, they are commonly labeled as “digital natives” (Prensky, 2001). According to the theory of the functional organ (e.g., Kaptelinin & Nardi, 2006; Leont’ev, 1974) a tool (e.g., the Internet) allows people to achieve better and more powerful performances which would not be attainable individually without that tool (e.g., sharing photos or of one’s latest purchase with several people in different parts of the world at the same time). In a similar vein, the literature suggests that being digital natives, for emerging adults, the Internet is simply a tool to perform numerous types of tasks (just like any other tool that is used to accomplish any other ordinary task, e.g., scissors to cut, Kaptelinin & Nardi, 2006; Leont’ev, 1974). Accordingly, when it comes to considering one’s personal network of social relationships, the clear distinction between the online and offline dimension which characterizes adults is likely to be absent in emerging adults, as the online component of their life is rooted in their personal and social development since their early life stages (Gómez-López et al., 2019). Thereby, we do not expect any reinforcing effect of PIU for adult consumers.

Hence, we propose the following:

H1b: Problematic Internet Use does not directly impact the well-being of emerging adult consumers.

From PIU to prosocial consumer behaviors

Prosocial consumer behavior refers to “purchase behavior involving self-sacrifice for the good of others or of society” (Small & Cryder, 2016, p. 107). Examples are charitable giving

(Small & Cryder, 2016) or purchasing products that “benefit a good cause” (Cavanaugh et al., 2015, p. 657) like sustainable, eco-friendly goods (e.g., Seegebarth et al., 2016).

Prosocial consumer behavior is a relevant issue for consumer research, particularly, in the light of the recent surge of these behaviors among consumers, part of a broader, increasing orientation of consumers towards behaviors such as donating, volunteering (e.g., Septianto et al., 2018), and more broadly, behaviors aimed at assisting others (e.g., Ross & Kapitan, 2018). Prosocial consumer behaviors may include a number of different behaviors, from monetary donations to purchasing goods and services which may help other people and/or the community, like purchasing in fair trade stores, purchasing from companies fighting child labor, or choosing product alternatives from environmentally friendly sources. Consumer research has devoted notable efforts to understanding “when and why” consumers engage in prosocial behaviors (e.g., Cavanaugh et al., 2015). Accordingly, most of the existing research has concentrated on identifying the antecedents and the outcomes of prosocial consumer behavior (e.g., Small & Cryder, 2016; White et al., 2020). With regards to the antecedents of prosocial consumer behavior, research has suggested that there are several motivating factors that may encourage individuals to engage in prosocial consumer behavior (see Small & Cryder, 2016 for a review): these include, for instance, extrinsic rewards, hedonic motives (e.g., pursuing pleasure), and the avoidance of negative feelings (e.g., guilt, Pelozo et al., 2013). Notably, external factors may sustain pro-environmental consumer choices as well, like the exposure to marketing actions aimed at reinforcing cause-related consumer sensitivity (e.g., Chang & Chu, 2020; Shin & Mattila, 2021).

Psychology literature has suggested that prosocial behaviors may be affected by the individual use of technology, particularly, related to the possibilities offered by technologies in terms of the construction of social relationships (Wright & Li, 2011). In this vein, PIU has

been shown to directly affect well-being (Diener, Oishi, & Tay, 2018) and that -under higher PIU- people move away from prosocial behaviors.

It is for this reason that in this research an attempt was made to bridge this gap by taking a cue from the psychological literature, which instead studied extensively that PIU has a negative effect on the behaviors and social relationships of adults and emerging adults.

These suggestions from psychology literature can be summarized by saying that PIU has a negative effect on the behaviors and social relationships of adults and emerging adults. We translate them into the marketing domain, focusing specifically on prosocial behaviors, advancing that:

H2: PIU decreases prosocial consumer behavior for adult consumers' (H2a) and emerging adult consumers (H2b)

From prosocial consumer behavior to individual well-being

Extant research suggests that prosocial behaviors can deliver positive psychological outcomes. For instance, literature on charitable giving reports that when consumers engage in prosocial behaviors, they achieve positive emotional benefits which make them feel good. In a similar vein, research on pro-environmental consumer behavior has suggested those behaviors as among those that influence most individual well-being (Erfani & Abedin, 2018). Those behaviors generate positive emotions, in that they are perceived as meaningful behaviors (i.e., important for others) and morally relevant (van der Werff & Steg, 2018; Venhoeven et al., 2020). Hence, engaging in prosocial behaviors leads individuals to feel better about themselves, thus enhancing their subjective well-being (Binder & Blankenberg, 2017; van der Werff & Steg, 2018).

Similarly, extant studies have suggested prosocial consumer behaviors as powerful drivers of eudaimonic well-being, in that such behaviors shift the individual focus from material

possessions to interpersonal relationships, self-growth, and more in general, to more pronounced attention to the meaning of life (Bauer et al., 2019). Such a positive relationship between prosocial behaviors and individual well-being has been consistently observed across different age groups, gender groups, and nationalities (Kasser, 2017).

Based on the above discussion, we propose the following:

H3: engaging in prosocial consumer behavior positively affects individual well-being for both adult consumers (H3a) and emerging adult consumers (H3b).

The role of online social support

Social support is considered as the whole set of information that adults and emerging adults gather through social interactions; it gives individuals the feeling of being loved, esteemed, capable, and part of a network characterized by reciprocal obligations (Cobb, 1976). Online settings are likely to play a key role in this sense, in that the immediacy and speed which characterizes processes of gathering social support (e.g., the mechanisms of positive feedback in social networks), provide an almost immediate and continuous satisfaction of individual needs for self-fulfillment and self-esteem (Meeus, Beullens, & Eggermont, 2019). Individuals may gather social support through online interactions; online social support delivers positive outcomes to individuals as well.

Individuals tend to seek inclusion in social groups, therefore seeking their support (Riedijk & Harakeh, 2018); the more they feel to belong to a social group (feeling support from group members), the more they will be inclined toward prosocial behaviors.

Particularly, if individuals perceive to have strong online social relationships, they feel more appreciated, and their self-esteem increases; furthermore, their openness to other people improves; as such, they are more likely to engage in prosocial behaviors (Benvenuti et. Al., 2020). Hence, we propose that online social support may play a key role in counteracting the discouraging effect of PIU on consumers' prosocial behaviors.

However, we also expect that this relationship will hold only for certain age groups. For adult consumers, (not digital natives), the creation of a strong online social network can lead to a major PIU.

This is unlikely to happen for emerging adults: being digital natives, the distinction between online and offline networks of relationships does not exist: in other words, they are likely to live their life constantly online (Floridi, 2015, 2021).

Hence, we propose the following:

H4: The negative effect of Problematic Internet Use on prosocial consumer behavior is weaker (stronger) when online social support is stronger (weaker). The effect holds for adult consumers (H4a), but not for emerging adults (H4b).

The conceptual model is depicted in Figure 1.

INSERT FIGURE 1 HERE

Methodology

Sample and measurements

Data collection was carried out by means of an online Qualtrics-developed questionnaire. A market research company recruited the respondents, inviting them to take the survey. Study 1 tested the conceptual model shown in Figure 1 on adult customers. Thus, 217 UK customers were recruited. Study 2, instead, tested the model on emerging adult consumers. Thus, 214 consumers were recruited. Again, respondents were sampled in the UK. In line with the theoretical background, the age thresholds for emerging adults were 18-29 years (Arnett, 2018), and 30+ for adults (Arnett & Mitra, 2020).

The questionnaire used measures for PIU (6 items) from Caplan (2010); prosocial consumer behavior (6 items) from Cavanaugh et al. (2015); well-being (12 items) from Diener et al. (2009); and online social support (8 items) from Lin et al. (2016). All items were measured

on 7-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). The items can be found in Table A.1 in the Appendix. Finally, respondents provided age and gender; then, they were thanked and debriefed.

Procedure

The PROCESS macro for SPSS was used to estimate the model presented in Figure 1 (Hayes, 2018; model 7). The mean composite scores on the items were used for each variable (Hayes, 2018). Online social support was entered as a moderator of the PIU-prosocial behavior relationship. The analysis assessed (1) the direct effect of PIU on well-being (both directly and indirectly, through prosocial consumer behavior), and (2) the effect of PIU on prosocial consumer behavior (as moderated by online social support). The statistical significance of the direct and indirect effects was evaluated by means of 5,000 bootstrap samples to create bias-corrected confidence intervals (CIs; 95%).

Results for Study 1: adult consumers

Measurement validity

Results from a CFA with AMOS 18 ($\chi^2/df < 3$; RMSEA = .07; CFI = .92) and Cronbach's alpha ranging between .81 and .95 provide support for the validity of the measures.

Anderson & Gerbing's (1988) adequacy of measurements procedure was followed. First, a confirmatory factor analysis supports the convergent validity of the measures: the composite reliability (CR) and the average variance extracted (AVE) exceed the .7 and .5 thresholds, respectively (Fornell & Larcker, 1981). Specifically, the minimum CR is .87, and the minimum AVE is .54.

Then, discriminant validity was assessed by comparing the AVE for each construct with the squared correlation between any two constructs (Fornell & Larcker, 1981). The lowest AVE (.54) exceeds the highest squared correlation between any two variables (.09), supporting

discriminant validity. The measurement model, therefore, meets all relevant psychometric properties. Details are provided in Tables A.1 and A.2 in the Appendix.

Model estimation

As advanced in H1a, a significant direct effect emerged for PIU on well-being (Effect = .09; $p < .001$). Furthermore, PIU reduced prosocial consumer behavior (Effect = - .40; $p < .05$), supporting H2a. In turn, prosocial consumer behavior positively affected well-being (Effect = .07; $p < .01$), as advanced in H3a. Overall, this evidence shows that prosocial consumer behavior is a partial mediator of the relationship between PIU and well-being. Moreover, online social support significantly moderated the effect of PIU (H4a) on well-being (Effect = .10; $p = .04$). This evidence supports the moderation of online social support as hypothesized in H4a. The index of moderated mediation was significant, as the 95% CI interval excluded zero (Effect = .007, 95% CI [0.00, 0.02]).

Results for Study 2: emerging adult consumers

Measurements validity

Again, results from a CFA with AMOS 18 ($\chi^2/df < 3$; RMSEA = .072; CFI = .97) and Cronbach's alpha ranging between .74 and .94 provide support for the validity of the measures. Anderson & Gerbing's (1988) adequacy of measurements procedure was followed as in Study 1. The confirmatory factor analysis supports once more the convergent validity of the measures: the composite reliability (CR) and the average variance extracted (AVE) exceed the .7 and .5 thresholds, respectively (Fornell & Larcker, 1981). Specifically, in Study 2, the minimum CR is .86, and the minimum AVE is .52.

The test of discriminant validity (Fornell & Larcker, 1981) confirms discriminant validity also in Study 2, as the lowest AVE (.52) exceeds the highest squared correlation between any two variables (.03). These findings corroborate once more that the measurement model meets

all relevant psychometric properties. Details are provided in Tables A.1 and A.2 in the Appendix.

Model estimation

As advanced in H1b, the direct effect of PIU on well-being was not significant (Effect = .01; $p = .45$). Furthermore, PIU reduced prosocial consumer behavior (Effect = - .36; $p < .05$), supporting H2b. In turn, prosocial consumer behavior positively affected well-being (Effect = .05; $p = .04$), as advanced in H3b. Overall, this evidence shows that prosocial consumer behavior is a mediator of the relationship between PIU and well-being for emerging adult consumers. However, online social support did not significantly moderate the effect of PIU (H4b) on prosocial consumer behavior (Effect = .05; $p = .25$). This evidence supports H4b. Finally, as for Study 1, the index of moderated mediation was significant, as the 95% CI interval excluded zero (Effect = .003, 95% CI [0.00, 0.01])

The results of the PROCESS macro are shown in Figure 2 and Table 1.

INSERT HERE FIGURE 2

Discussion

This research addressed internet use and prosocial consumer behaviors, examining their impacts on individual well-being (Aknin, et. Al., 2013; Dunn, et. Al., 2020). Our contribution combines the perspectives of marketing and psychology, addressing two population groups: adults and emerging adults. The contribution and framework, based on the Cognitive Behavioral Model, provide insights into the consumer-related effects of PIU, and how they reflect on consumer well-being (Çikrikci, 2016; Anisman-Razin & Levontin, 2020).

The findings of the present research validate the ones of previous studies, suggesting prosocial consumer behaviors as drivers of consumers' well-being. However, the study goes one step further by suggesting that such consumer behaviors may be discouraged by PIU.

This is to say, that PIU may not be simply a direct source of lower individual well-being (as

suggested in psychology literature), but also an indirect one, by discouraging certain behaviors that, otherwise, positively contribute to consumers' well-being (i.e., prosocial ones) (Kasser, 2014; Joireman & Durante, 2016). Furthermore, the findings demonstrate that online social support may partially offset the negative effect of PIU on prosocial consumer behaviors; this is to say, when individuals perceive of being socially supported online, this may reduce the negative influence PIU has in terms of discouraging their engagement in prosocial consumer behaviors (i.e., they will be more likely to engage in prosocial consumer behaviors); notably, social support reduces the negative influence of PIU on prosocial behavior only for adult consumers.

Our findings may inspire novel research questions about consumers' use of technology and their choice towards prosocial alternatives, and, more broadly, about the relationships between technology, consumer behaviors, and well-being.

Theoretical implications

The present study responds to recent calls in marketing research aimed at developing further knowledge on the “causes, motivations, and consequences of prosocial consumer behavior” (White et al., 2020, p. 12). In doing so, it examines the relationships between technology usage, prosocial consumer behaviors, and individual well-being (Cano Murillo et al., 2016, p. 626).

The findings of the present study advance current knowledge in several directions.

First, they advance the literature on prosocial consumer behaviors and well-being, taking a broader perspective on such behaviors than the one embraced in most of the extant literature on prosocial consumer behavior, largely focused on specific kinds of products, services, and behaviors (Kadic-Maglajlic et al., 2019), like fair trade (Andorfer & Liebe, 2012; Ladhari &

Tchetgna, 2015; Basso et al., 2021) or pro-environmental ones (e.g., Soyez, 2012; Han & Hyun, 2017; Saracevic et al., 2022).

Second, results advance the literature about the consumer-related effects of PIU. While its behavioral outcomes are an established topic in psychology literature, the marketing research on the impact(s) of PIU on consumer behaviors and choice appears intrinsically limited, being focused only on specific consumption behaviors, (i.e., compulsive buying behaviors, Sun & Wu, 2011; Bhatia, 2019). Thus, the present study enriches marketing literature on consumer-related effects of PIU by showing that it is likely not only to encourage certain kinds of consumption behaviors, rather, it can also discourage consumption behaviors which may exert a key influence on consumers' well-being (Kashchuk & Ivankina, 2015; Mundel, Yang & Wan, 2022).

Third, the present study contributes to the marketing literature on the consumer-related effects of online social interactions. On the one hand, it corroborates results from extant research, suggesting that prosocial consumer behaviors can be favored by social interactions (e.g., White et al., 2020); on the other hand, it adds to the current literature that, in the case of online social interactions, their influence may differ according to diverse consumer segments. Fourth, with respect to emerging adults, results corroborate those of extant research observing that, because of having “grown up in a digital environment” (Kirk et al., 2015, p.4), when it comes to considering interaction with digital environments, consumer behavioral dynamics of emerging adults are likely to differ from those of other consumers (Lim et al., 2021; Filho et al., 2021), also in terms of prosocial consumer behavior. In other words, results advance consumer literature about how consumer-specific characteristics of emerging adults (i.e., their specific approach to digital technology) may reflect on their prosocial consumption behavior. This appears of particular importance for this consumer group: while, on the one hand, prior research indicate prosocial consumer behaviors “especially salient” (Maglajlic et

al., 2019) for emerging adults (e.g., because of their awareness and concern for the future of Earth, Johnstone & Hooper, 2016), on the other hand, emerging adults are consumers at major risk of developing PIU, especially following the COVID-19 pandemic (e.g., Burkauskas et al., 2022). Therefore, in this sense, the present research also contributes to the understanding of the contingencies under which prosocial behaviors occur (Maglajlic et al., 2019).

Overall, these contributions carry potentially relevant practical implications, as detailed below.

Managerial Implications

The present paper carries some practical implications, which may be of interest to both marketing practitioners and policymakers.

First, the results suggest to marketers that prosocial consumer behaviors are relevant drivers of consumer well-being. In other words, apparently, these behaviors help people feel better. Accordingly, companies may leverage this positive link to promote prosocial consumer behavior. Real-world practices are echoing this finding: for instance, fair-trade associations are leveraging the fact that ethical consumption delivers a key contribution to the well-being of the entire value chain involved, thus leveraging several meanings that work as powerful boosters for individual well-being (e.g., FairTrade, 2022), like moral meaning.

Second, as suggested by the moderating effect of online social support, online social interaction may deliver a key impact in encouraging individuals to engage in prosocial consumer behaviors, despite the negative effect of PIU. This suggests marketers that, to promote prosocial behaviors, it may be relevant to ensure the necessary verification that consumers look for. In this vein, it may be essential to encourage customers to share online their prosocial behaviors (e.g., donating, purchasing from fair trade sources), ensuring

positive reinforcement (e.g., commenting, reposting) that would offset the potential, negative effects deriving from problematic use of the internet. In a similar vein could be considered to develop platforms encouraging individuals not just to engage in prosocial consumption, but also to find support in other individuals sharing the same values and experiences.

Third, findings suggest that the picture might be more complicated for emerging adults, for which the moderating effect of social support was revealed to be not significant. This may result from the fact that, for these consumers, the use of technology is purely instrumental; accordingly, the line between online and offline social relationships is for them blurred, if not inexistent. Interestingly, for emerging adults, PIU had a negative effect on well-being only through consumption. This suggests policymakers posing careful attention to the potential evolutionary patterns of these mechanisms, as (1) insurgence of PIU in emerging adults may be more difficult to be timely identified; and (2) emerging adults are in an age of change and confusion, in which individualistic tendencies are likely to prevail; accordingly, PIU may further encourage consumption choices that, indeed, do not promote well-being and that may result, in the long run, in fueling additional pathological behaviors (e.g., compulsive consumer behaviors).

Limitations and future research

The present study is not meant to be conclusive. First, it did not address the origin of PIU in consumers of different ages: Does it stem from the same sources, or does it differ among age groups? Future research in this direction is welcome. Second, the proposed operationalization incorporated one mediator (prosocial consumer behavior) and one moderator (online social support). Future research may explore other interacting variables, reflecting the specificities of different consumer ages. Recent research suggested that emerging adults and adults may be denoted by different characteristics which may impact the likelihood they may engage in

prosocial behavior. Accordingly, for instance, perception of environmental problems (e.g., climate awareness) might be biased for emerging adults, in that, as age increases, perceptions of future problems are likely to decrease, including the perception of future climate risks. Finally, future studies may consider the possible differences in the proposed relationships for different kinds of prosocial behaviors in terms, for instance, of varying amounts of effort and persistence required to accomplish them (e.g., Cavanaugh et al., 2015).

References

- Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., ... & Norton, M. I. (2013). Prosocial spending and well-being: cross-cultural evidence for a psychological universal. *Journal of personality and social psychology*, *104*(4), 635.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach'. *Psychological Bulletin*, *103*(3), 411–423.
- Andorfer, V. A., & Liebe, U. (2012). Research on Fair Trade Consumption-A Review. In *Journal of Business Ethics* (Vol. 106, Issue 4, pp. 415–435). <https://doi.org/10.1007/s10551-011-1008-5>
- Anisman-Razin, M., & Levontin, L. (2020). Prosocial behavior reframed: How consumer mindsets shape dependency-oriented versus autonomy-oriented helping. *Journal of the Association for Consumer Research*, *5*(1), 95-105.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Arnett, J. J. (2018). Conceptual Foundations of Emerging Adulthood. In J. L. Murray & J. J. Arnett (Eds.), *Emerging Adulthood and Higher Education* (pp. 11–24). Routledge.
- Arnett, J. J., & Mitra, D. (2020). Are the Features of Emerging Adulthood Developmentally Distinctive? A Comparison of Ages 18–60 in the United States. *Emerging Adulthood*, *8*(5), 412–419. <https://doi.org/10.1177/2167696818810073>
- Aslanbay, Y., Aslanbay, M., & Çobanoğlu, E. (2009). Internet addiction among Turkish young consumers. *Young Consumers*, *10*(1), 60–70. <https://doi.org/10.1108/17473610910940792>
- Burkauskas, J., Gecaite-Stonciene, J., Demetrovics, Z., Griffiths, M. D., & Király, O. (2022). Prevalence of problematic Internet use during the coronavirus disease 2019 pandemic.

Current Opinion in Behavioral Sciences, 46, 101179.

<https://doi.org/10.1016/J.COBEHA.2022.101179>

Basso, F., Bouillé, J., & Troiville, J. (2021). Are you up for fair-trade products? Vertical dimension as a metaphorical representation of virtuous consumption. *Journal of Business Research*, 135, 508–518. <https://doi.org/10.1016/j.jbusres.2021.06.050>

Bhatia, V. (2019). Impact of fashion interest, materialism and internet addiction on e-compulsive buying behaviour of apparel. *Journal of Global Fashion Marketing*, 10(1), 66–80. <https://doi.org/10.1080/20932685.2018.1544502>

Bauer, J. J., Graham, L. E., Lauber, E. A., & Lynch, B. P. (2019). What growth sounds like: Redemption, self-improvement, and eudaimonic growth across different life narratives in relation to well-being. *Journal of Personality*, 87(3), 546–565. <https://doi.org/10.1111/jopy.12414>

Beard, K. W., & Wolf, E. M. (2001). Modification in the Proposed Diagnostic Criteria for Internet Addiction. *CyberPsychology & Behavior*, 4(3), 377–383. <https://doi.org/10.1089/109493101300210286>

Bennett, S., Maton, K., & Kervin, L. (2008). The ‘digital natives’ debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775–786. <https://doi.org/10.1111/j.1467-8535.2007.00793.x>

Benvenuti M.; Giovagnoli S.; Keep M.; Mazzoni E.; Selleri P., The Onlife in Emerging Adulthood: Experimentation, Exploration, and Change in the Digital Era, in: Michelle F. Wright, Recent Advances in Digital Media Impacts on Identity, Sexuality, and Relationships, Hershey, PA 17033, USA, IGI Global, 2020, pp. 241 - 264

Berk, L. (2017). *Development Through the Lifespan*. Pearson.

- Binder, M., & Blankenberg, A. K. (2017). Green lifestyles and subjective well-being: More about self-image than actual behavior? *Journal of Economic Behavior and Organization*, *137*, 304–323. <https://doi.org/10.1016/j.jebo.2017.03.009>
- Buonomo, I., Cipriani, I., Piperno, S., Saggi, I., & Fiorilli, C. (2015). Internet and Socialization How Internet use influences online and offline relationships. *Anthropological Researches and studies*, *1*(5), 3-10.
- Bridges, E., & Florsheim, R. (2008). Hedonic and utilitarian shopping goals: The online experience. *Journal of Business Research*, *61*(4), 309–314.
<https://doi.org/10.1016/j.jbusres.2007.06.017>
- Buhalis, D., Parra López, E., & Martínez-González, J. A. (2020). Influence of young consumers' external and internal variables on their e-loyalty to tourism sites. *Journal of Destination Marketing & Management*, *15*, 100409. <https://doi.org/10.1016/j.jdmm.2020.100409>
- Caplan, S. E. (2010). Theory and measurement of generalized problematic Internet use: A two-step approach. *Computers in Human Behavior*, *26*(5), 1089–1097.
<https://doi.org/10.1016/j.chb.2010.03.012>
- Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. (2015). Feeling Love and Doing More for Distant Others: Specific Positive Emotions Differentially Affect Prosocial Consumption. *Journal of Marketing Research*, *52*(5), 657–673. <https://doi.org/10.1509/jmr.10.0219>
- Chang, C. T., & Chu, X. Y. (Marcos). (2020). The give and take of cause-related marketing: purchasing cause-related products licenses consumer indulgence. *Journal of the Academy of Marketing Science*, *48*(2), 203–221. <https://doi.org/10.1007/s11747-019-00675-5>
- Çikrikci, Ö. (2016). The effect of internet use on well-being: Meta-analysis. *Computers in Human Behavior*, *65*, 560-566.
- Cobb, S. (1976). Social Support as a Moderator of Life Stress. *Psychosomatic Medicine*, *38*(5), 300–314. <https://doi.org/10.1097/00006842-197609000-00003>

- Corijn, M., & Klijzing, E. (Eds.). (2013). *Transitions to Adulthood in Europe* (Vol. 10). Springer Science & Business Media.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior*, 17(2), 187–195. [https://doi.org/10.1016/S0747-5632\(00\)00041-8](https://doi.org/10.1016/S0747-5632(00)00041-8)
- Diener, E., Oishi, S., & Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour*, 2(4), 253–260. <https://doi.org/10.1038/s41562-018-0307-6>
- Diener, E., Wirtz, D., Biswas-Diener, R., Tov, W., Kim-Prieto, C., Choi, D., & Oishi, S. (2009). New Measures of Well-Being. In E. Diener (Ed.), *Assessing Well-Being* (pp. 247–266). https://doi.org/10.1007/978-90-481-2354-4_12
- Dhiman, N., & Kumar, A. (2022). What We Know and Don't Know About Consumer Happiness: Three-Decade Review, Synthesis, and Research Propositions. *Journal of Interactive Marketing*, 10949968221095548.
- Dunn, E. W., Whillans, A. V., Norton, M. I., & Aknin, L. B. (2020). Prosocial spending and buying time: Money as a tool for increasing subjective well-being. In *Advances in experimental social psychology* (Vol. 61, pp. 67-126). Academic Press.
- Erfani, S. S., & Abedin, B. (2018). Impacts of the use of social network sites on users' psychological well-being: A systematic review. *Journal of the Association for Information Science and Technology*, 69(7), 900–912. <https://doi.org/10.1002/asi.24015>
- Erjavec, J., & Manfreda, A. (2022). Online shopping adoption during COVID-19 and social isolation: Extending the UTAUT model with herd behavior. *Journal of Retailing and Consumer Services*, 65, 102867. <https://doi.org/10.1016/J.JRETCONSER.2021.102867>
- Feiereisen, S., Rasolofoarison, D., de Valck, K., & Schmitt, J. (2019). Understanding emerging adults' consumption of TV series in the digital age: A practice-theory-based approach. *Journal of Business Research*, 95, 253–265. <https://doi.org/10.1016/j.jbusres.2018.08.024>

- Filho, E. J. M. A., Gammarano, I. de J. L. P., & Barreto, I. A. (2021). Technology-driven consumption: digital natives and immigrants in the context of multifunctional convergence. *Journal of Strategic Marketing*, 29(3), 181–205.
<https://doi.org/10.1080/0965254X.2019.1656278>
- Fioravanti, G., Primi, C., & Casale, S. (2013). Psychometric Evaluation of the Generalized Problematic Internet Use Scale 2 in an Italian Sample. *Cyberpsychology, Behavior, and Social Networking*, 16(10), 761–766. <https://doi.org/10.1089/cyber.2012.0429>
- Floridi, L. (Ed.). (2015). *The Onlife Manifesto*. Springer International Publishing.
<https://doi.org/10.1007/978-3-319-04093-6>
- Floridi, L. (2021). Digital Time: Latency, Real-time, and the Onlife Experience of Everyday Time. *Philosophy & Technology*, 34(3), 407–412. <https://doi.org/10.1007/s13347-021-00472-5>
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50.
<https://doi.org/10.2307/3151312>
- Gómez-López, M., Viejo, C., & Ortega-Ruiz, R. (2019). Well-Being and Romantic Relationships: A Systematic Review in Adolescence and Emerging Adulthood. *International Journal of Environmental Research and Public Health*, 16(13), 2415.
<https://doi.org/10.3390/ijerph16132415>
- Griffiths, M. (2010). Internet abuse and internet addiction in the workplace. *Journal of Workplace Learning*.
- Han, H., & Hyun, S. S. (2017). Fostering customers' pro-environmental behavior at a museum. *Journal of Sustainable Tourism*, 25(9), 1240–1256.
<https://doi.org/10.1080/09669582.2016.1259318>
- Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis Methodology in the Social Sciences*. Guilford Press. www.guilford.com/MSS

- Hunsaker, A., & Hargittai, E. (2018). A review of Internet use among older adults. *New Media & Society*, 20(10), 3937–3954. <https://doi.org/10.1177/1461444818787348>
- Jebb, A. T., Morrison, M., Tay, L., & Diener, E. (2020). Subjective Well-Being Around the World: Trends and Predictors Across the Life Span. *Psychological Science*, 31(3), 293–305. <https://doi.org/10.1177/0956797619898826>
- Johnstone, M.-L., & Hooper, S. (2016). Social influence and green consumption behaviour: A need for greater government involvement. *Journal of Marketing Management*, 32(9–10), 827–855. <https://doi.org/10.1080/0267257X.2016.1189955>
- Joireman, J., & Durante, K. M. (2016). Editorial overview: Consumer behavior. *Current opinion in psychology*, 10, iv-vii.
- Kadic-Maglajlic, S., Arslanagic-Kalajdzic, M., Micevski, M., Dlacic, J., & Zabkar, V. (2019). Being engaged is a good thing: Understanding sustainable consumption behavior among young adults. *Journal of Business Research*, 104, 644–654. <https://doi.org/10.1016/j.jbusres.2019.02.040>
- Kandell, J. J. (1998). Internet Addiction on Campus: The Vulnerability of College Students. *CyberPsychology & Behavior*, 1(1), 11–17. <https://doi.org/10.1089/cpb.1998.1.11>
- Kaptelinin, V., & Nardi, B. A. (2006). *Acting with technology: Activity theory and interaction design*. MIT Press.
- Kashchuk, I., & Ivankina, L. (2015). Marketing approach to the research of older adults' well-being. *Procedia-Social and Behavioral Sciences*, 214, 911-915.
- Kasser, T. (2014). Teaching about values and goals: Applications of the circumplex model to motivation, well-being, and prosocial behavior. *Teaching of Psychology*, 41(4), 365-371.
- Kasser, T. (2017). Living both well and sustainably: a review of the literature, with some reflections on future research, interventions and policy. *Philosophical Transactions of the*

Royal Society A: Mathematical, Physical and Engineering Sciences, 375(2095), 20160369.

<https://doi.org/10.1098/rsta.2016.0369>

Kirk, C. P., Chiagouris, L., Lala, V., & Thomas, J. D. E. (2015). How Do Digital Natives and Digital Immigrants Respond Differently to Interactivity Online? *Journal of Advertising Research*, 55(1), 81–94. <https://doi.org/10.2501/JAR-55-1-081-094>

Kuss, D. J., & Lopez-Fernandez, O. (2016). Internet addiction and problematic Internet use: A systematic review of clinical research. *World Journal of Psychiatry*, 6(1), 143.

<https://doi.org/10.5498/wjp.v6.i1.143>

Ladhari, R., & Tchetgna, N. M. (2015). The influence of personal values on Fair Trade consumption. *Journal of Cleaner Production*, 87, 469–477.

<https://doi.org/10.1016/j.jclepro.2014.10.068>

Leont'ev, A. N. (1974). The Problem of Activity in Psychology. *Soviet Psychology*, 13(2), 4–33.

<https://doi.org/10.2753/RPO1061-040513024>

Lim, W. M., Gupta, S., Aggarwal, A., Paul, J., & Sadhna, P. (2021). How do digital natives perceive and react toward online advertising? Implications for SMEs. *Journal of Strategic Marketing*, 1–35. <https://doi.org/10.1080/0965254X.2021.1941204>

Lin, X., Zhang, D., & Li, Y. (2016). Delineating the dimensions of social support on social networking sites and their effects: A comparative model. *Computers in Human Behavior*, 58, 421–430. <https://doi.org/10.1016/J.CHB.2016.01.017>

Mundel, J., Yang, J., & Wan, A. (2022). Influencer Marketing and Consumer Well-Being: From Source Characteristics to Social Media Anxiety and Addiction. In *The Emerald Handbook of Computer-Mediated Communication and Social Media* (pp. 323-340). Emerald Publishing Limited.

- Marchant, C., & O'Donohoe, S. (2014). Edging out of the nest: emerging adults' use of smartphones in maintaining and transforming family relationships. *Journal of Marketing Management*, 30(15–16), 1554–1576. <https://doi.org/10.1080/0267257X.2014.935798>
- Meeus, A., Beullens, K., & Eggermont, S. (2019). Like me (please?): Connecting online self-presentation to pre-and early adolescents' self-esteem. *New Media & Society*, 21(11-12), 2386-2403.
- M. Ross, S., & Kapitan, S. (2018). Balancing self/collective-interest: equity theory for prosocial consumption. *European Journal of Marketing*, 52(3–4), 528–549. <https://doi.org/10.1108/EJM-01-2017-0002>
- Müller, A., Joshi, M., & Thomas, T. A. (2022). Excessive shopping on the internet: recent trends in compulsive buying-shopping disorder. *Current Opinion in Behavioral Sciences*, 44, 101116.
- Nelson, L. J. (2003). Rites of Passage in Emerging Adulthood: Perspectives of Young Mormons. *New Directions for Child and Adolescent Development*, 2003(100), 33–50. <https://doi.org/10.1002/cd.73>
- Pelozo, J., White, K., & Shang, J. (2013). Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes. *Journal of Marketing*, 77(1), 104–119. <https://doi.org/10.1509/jm.11.0454>
- Prensky, M. (2001). Digital Natives, Digital Immigrants Part 2: Do They Really Think Differently? *On the Horizon*, 9(6), 1–6. <https://doi.org/10.1108/10748120110424843>
- Reifman, A., Arnett, J. J., & Colwell, M. J. (2007). Emerging Adulthood: Theory, Assessment and Application. *Journal of Youth Development*, 2(1), 37–48. <https://doi.org/10.5195/jyd.2007.359>
- Riedijk, L., & Harakeh, Z. (2018). Imitating the Risky Decision-Making of Peers. *Emerging Adulthood*, 6(4), 255–265. <https://doi.org/10.1177/2167696817722918>

- Saracevic, S., Schlegelmilch, B. B., & Wu, T. (2022). How normative appeals influence pro-environmental behavior: The role of individualism and collectivism. *Journal of Cleaner Production*, 344, 131086. <https://doi.org/10.1016/j.jclepro.2022.131086>
- Seegebarth, B., Peyer, M., Balderjahn, I., & Wiedmann, K.-P. (2016). The Sustainability Roots of Anticonsumption Lifestyles and Initial Insights Regarding Their Effects on Consumers' Well-Being. *Journal of Consumer Affairs*, 50(1), 68–99. <https://doi.org/10.1111/joca.12077>
- Septianto, F., Sung, B., Seo, Y., & Tugiman, N. (2018). Proud volunteers: the role of self- and vicarious-pride in promoting volunteering. *Marketing Letters*, 29(4), 501–519. <https://doi.org/10.1007/s11002-018-9472-7>
- Shapira, N. A., Goldsmith, T. D., Keck, P. E., Khosla, U. M., & McElroy, S. L. (2000). Psychiatric features of individuals with problematic internet use. *Journal of Affective Disorders*, 57(1–3), 267–272. [https://doi.org/10.1016/S0165-0327\(99\)00107-X](https://doi.org/10.1016/S0165-0327(99)00107-X)
- Shin, J., & Mattila, A. S. (2021). Aww effect: Engaging consumers in “non-cute” prosocial initiatives with cuteness. *Journal of Business Research*, 126, 209–220. <https://doi.org/10.1016/J.JBUSRES.2020.11.046>
- Shopify. (2021). *Future of Commerce*.
- Small, D. A., & Cryder, C. (2016). Prosocial consumer behavior. *Current Opinion in Psychology*, 10, 107–111. <https://doi.org/10.1016/J.COPSYC.2016.01.001>
- Soyez, K. (2012). How national cultural values affect pro-environmental consumer behavior. *International Marketing Review*, 29(6), 623–646. <https://doi.org/10.1108/02651331211277973>
- Statista (2022). Daily social media use worldwide.
- Sun, T., & Wu, G. (2011). Trait Predictors of Online Impulsive Buying Tendency: A Hierarchical Approach. *Journal of Marketing Theory and Practice*, 19(3), 337–346. <https://doi.org/10.2753/MTP1069-6679190307>

- Szabo, A., Allen, J., Stephens, C., & Alpass, F. (2019). Longitudinal Analysis of the Relationship Between Purposes of Internet Use and Well-being Among Older Adults. *The Gerontologist*, 59(1), 58–68. <https://doi.org/10.1093/geront/gny036>
- Trible, H. (2015). *Emerging Adulthood: Defining the Life Stage and its Developmental Tasks*. James Madison University.
- van der Werff, E., & Steg, L. (2018). Spillover Benefits: Emphasizing Different Benefits of Environmental Behavior and Its Effects on Spillover. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.02347>
- Venhoeven, L. A., Bolderdijk, J. W., & Steg, L. (2020). Why going green feels good. *Journal of Environmental Psychology*, 71, 101492. <https://doi.org/10.1016/j.jenvp.2020.101492>
- White, K., Habib, R., & Dahl, D. W. (2020). A Review and Framework for Thinking about the Drivers of Prosocial Consumer Behavior. *Journal of the Association for Consumer Research*, 5(1), 2–18. <https://doi.org/10.1086/706782>
- Wright, M. F., & Li, Y. (2011). The associations between young adults' face-to-face prosocial behaviors and their online prosocial behaviors. *Computers in Human Behavior*, 27(5), 1959–1962.
- Young, K. S. (1998). *Caught in the net: How to recognize the signs of internet addiction--and a winning strategy for recovery*. John Wiley & Sons.
- Young, K. S., & Rogers, R. C. (1998). The Relationship Between Depression and Internet Addiction. *CyberPsychology & Behavior*, 1(1), 25–28. <https://doi.org/10.1089/cpb.1998.1.25>

Appendix

Figures and tables recalled in the text

Figure 1. The conceptual model

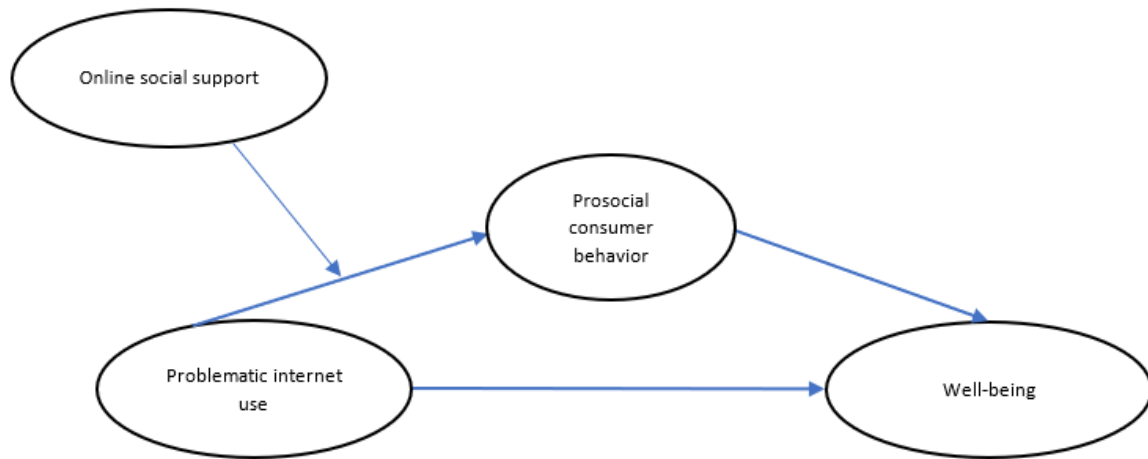


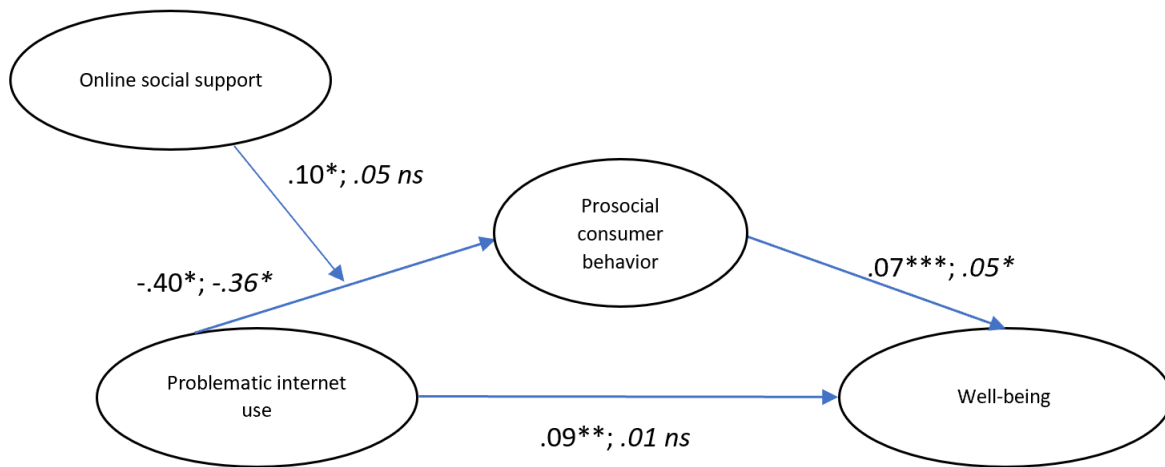
Table 2. Model estimates

	HP.						ULC	
		Group	Coeff	se	<i>t</i>	<i>p</i>	LLCI	I
PIU on prosocial consumer behavior	H2a	Adults	-.39	.17	-	.02	-.73	-.06
					2.35			
	H2b	Emerging	-.36	.15	-	.02	-.67	-.05
					2.33			
Moderation of online social support	H4a	Adults	.10	.05	1.99	.04	.001	.199
	H4b	Emerging	.05	.04	1.16	.24	-.03	.13
Prosocial consumer behavior on well-being	H3a	Adults	.07	.026	2.80	.005	.021	.12
	H3b	Emerging	.05	.02	2.03	.04	.001	.10
Direct effect	H1a	Adults	.09	.026	3.47	.000	.03	.14
	H1b	Emerging	.01	.024	.75	.45	-.03	.066

Note. Coeff = coefficient; SE = standard error; LLCI = lower-limit confidence interval; ULCI = upper-limit confidence interval.

Figure 2. The model with estimates

N= 217; 214



Italics: Study 2

Table A.1. Measurement items

Measures	Loadings		CR		AVE		Cronbach alpha	
	S1	S2	S1	S2	S1	S2	S1	S2
Problematic Internet Use (adapted from Caplan, 2010)			.88	.89	.59	.62	.82	.83
<i>Please, evaluate your agreement with the following statements (From 1 - not at all true for me to 7 - extremely true for me)</i>								
I prefer communicating with people online rather than face-to-face	.61	.61						
I have used the Internet to make myself feel better when I was down	.60	.62						

I think obsessively about going online when I am offline	.85	.83
I have difficulty controlling the amount of time I spend online	.84	.86
When offline, I have a hard time trying to resist the urge to go online	.89	.89
My internet use has made it difficult for me to manage my life	.80	.85

Prosocial Consumer Behavior .87 .86 .54 .52 .81 .74

(adapted from Cavanaugh et al., 2015)

Please report the likelihood you will engage in the following consumption behaviors over the next weeks, using the scale below (From 1- extremely unlikely to 7- extremely likely)

Donate used items/ clothing to a charitable organization to help local families in need.	.73	.71
Buy products made from recycled materials, helping to preserve local forest lands.	.71	.70
Volunteer your time to a charitable organization benefiting local youth.	.61	.65

Refuse to buy a product if it is made using child or sweat shop labor in foreign countries.	.72	.61
Buy a product that donates part of its profits to a charitable organization helping refugee families in a foreign country.	.85	.79
Donate money to a charitable organization / cause benefiting rainforest conservation in foreign countries	.76	.80

Online Social support (adapted from Lin et al., 2016)

Please, evaluate your agreement with the following statements (From 1- Strongly Disagree to 7- Agree)

I regularly use SNS to seek information I need.	.79	.77
When faced with difficulties, some people on SNS are on my side with me.	.84	.84
When faced with difficulties, some people on SNS comforted and encouraged me.	.88	.89

When faced with difficulties, some people on SNS listened to me talk about my private feelings	.89	.86
When faced with difficulties, some people on SNS expressed interest and concern in my well-being	.88	.88
I maintain close social relationships with others on SNS.	.89	.85
I spend a lot of time interacting with others on SNS.	.87	.85
I feel a sense of belonging to SNS.	.90	.89

Well-being (Diener et al., 2009) .96 .95 .64 .62 .94 .93

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 (From 1 - Very Rarely or Never to 7- Very Often or Always)

Positive	.88	.86
Negative	.87	.83
Good	.87	.85
Bad	.81	.85
Pleasant	.84	.83

Unpleasant	.80	.77
Happy	.85	.84
Sad	.79	.81
Afraid	.61	.62
Joyful	.79	.79
Angry	.81	.75
Contented	.64	.61

Table A.2

Means, standard deviations, and squared correlations

Variable	Group	Mean	SD	1	2	3	4
1 PIU	Adults	3.02	1.18	1			
	<i>Emerging</i>	<i>3.31</i>	<i>1.23</i>	<i>1</i>			
2 Prosocial consumer behavior	Adults	3.96	1.19	.004	1		
	<i>Emerging</i>	<i>3.96</i>	<i>1.14</i>	<i>0.03</i>	<i>1</i>		
3 Well-being	Adults	3.88	.47	.04	.03	1	
	<i>Emerging</i>	<i>3.89</i>	<i>.43</i>	<i>.0006</i>	<i>.02</i>	<i>1</i>	
4 Online Social Support	Adults	3.03	1.49	.09	.001	.04	1
	<i>Emerging</i>	<i>3.45</i>	<i>1.47</i>	<i>.03</i>	<i>.009</i>	<i>.0001</i>	<i>1</i>

Note. SD = standard deviation.