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

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Abstract

While much 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 by applying the cognitive-behavioral model in 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, the authors explore whether problematic internet use influences well-being through the mediation of prosocial consumer behavior and the moderation of online-social support. The results show that problematic internet use 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

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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 for individual well-being: prior consumer research identifies them as powerful determinants of consumers' well-being (e.g., Dhiman and Kumar 2022) because of their ability to foster several positive outcomes (such as emotional stability [Venhoeven, Bolderdijk, and Steg 2020] and improved interpersonal relationships and self-growth [Bauer et al. 2019]). It is, therefore, not surprising that researchers (e.g., Berki-Kiss and Menrad 2022; Rapert, Thyroff, and Grace 2021) have recently called for the development of 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 whether (and how) internet use affects the extent to which individuals engage (or do not engage) 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, Kang, and Yoon 2016, p. 626), without considering that they are

both relevant drivers of individual well-being. Although prosocial consumer behaviors are positively related to individual well-being, internet use has often been negatively associated with it. These adverse effects are usually put under the umbrella of problematic internet use (PIU). Nowadays, the ubiquitous exposure to internet-based devices, technologies, and applications has increased individuals' risk of developing PIU, hampering their well-being by favoring the development of aggressive states, anxiety, and social isolation (e.g., Kuss and Lopez-Fernandez 2016). However, the effects of PIU 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, Aslanbay, and Çobanoğlu 2009); others, instead, found no correlation between PIU and purchasing behaviors (e.g., Bridges and Florsheim 2008).

Thus, the present research builds on insights from psychology and marketing research to explore how PIU (which, alone, is likely to have 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, we propose 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 to contribute 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, as emerging adults (i.e., consumers age 18–29 years) are a major target market for prosocial consumer behavior (e.g., Drenik 2022). Indeed, these consumers have a specific relation with technology different from that of other customer segments, being identified as “digital natives,” for whom the internet has been a component of their life rooted in their personal and social development since their early life stages. Thus, the present study tests the proposed framework in two consumer groups: emerging adults (age 18–29 years) and adults (age 30 years and over).

Theoretical Background and Hypothesis Development

Emerging adult consumers represent a key segment for scholars and practitioners; thus, marketing research has recently directed increasing attention toward them. However, marketing research on such consumers still appears in its infancy, whereas the literature in psychology has abundantly highlighted that adults and

emerging adults exhibit different behaviors and mental processes (Berk 2017). Much less is known about (1) the possible impacts of technology use on their consumption behavior and (2) whether emerging adults' consumer behaviors positively influence their well-being.

Because we propose in this research 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 the 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 are (1) accepting responsibility for oneself, (2) making independent decisions, and (3) becoming financially independent (e.g., United States: Arnett 2018; Nelson 2003; Europe: Corijn and Klijzing 2010). These three criteria are stable not only across cultures and nations but also across ethnic groups and social classes (Arnett 2018; Arnett and Mitra 2020). In most developed countries, they are usually first met at age 30 years, which psychologists agree is the threshold for adulthood (Arnett and Mitra 2020).

In contrast, 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 have been considered those in the age range of 18 to 29 years. This age span covers emerging adults' five characteristic features (Arnett 2018; Reifman, Arnett, and Colwell 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 career), (4) feeling in-between (taking responsibility for oneself, but still not completely feeling like an adult), and (5) multiple possibilities (their future not being already set; educational, professional, and family patterns are still in development).

The Relationship Between Age, Problematic Internet Use, and Well-Being

PIU was defined by Shapira et al. (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 (*Diagnostic and Statistical Manual of Mental Disorders*, 4th ed.) definition of substance dependence and pathological gambling, respectively (see Young 1998; Young and 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 and Wolf 2001).

Several facets and measurement instruments have been proposed for PIU since its definition by Shapira et al. (2000). In line with the aims of the present research, we refer to the conceptualization of PIU in the cognitive-behavioral model, 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 for individuals’ lives (Davis 2001). In the 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, Primi, and Casale 2013). In this model, PIU can be divided into specific PIU, which is the overuse of content-specific functions of the internet (e.g., gambling and viewing sexual material), and generalized PIU, 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 adults’ and emerging adults’ relationship with technology varies not just in terms of mere usage but in terms of a general attitude toward technologies, devices, and applications. Specifically, adults have been labeled as “digital immigrants” (Premsky 2001), in that they were born before the widespread usage of technology and devices.

Adults have been shown to use the internet to perform specific tasks, mostly job-related tasks (Griffiths 2010), shopping tasks (Müller, Joshi, and Thomas 2022), and socializing (e.g., Buonomo et al. 2015). Particularly as a result of 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 process of constructing social connections (Hunsaker and 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 online component of adults’ network of relationships may have fully compensated for the absence of the offline component; as a result, recent studies have reported that the massive use of the internet by adults has positively influenced their health and well-being (Szabo et al. 2019).

Notably, extant research has reported that some internet-based activities (e.g., development of social relationships) might be characterized by a reinforcing nature, leading to the development of a conditioned response every time the user is in contact with a given situational cue (Keles, McCrae, and Grealish 2020). 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 generalized or specific PIU.

Thus, 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:

H_{1a}: PIU has a 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 that of adult consumers. Unlike adults, they have had the usage of technological tools as part of their everyday lives since their early stages of development (i.e., early childhood; Berk 2017); in this sense, they are commonly labeled “digital natives” (Premsky 2001). According to the theory of the functional organ (e.g., Kaptelinin and 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 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 for emerging adults, as digital natives, 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 and 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 that characterizes adults’ relationships 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, Viejo, and Ortega-Ruiz 2019). Thereby, we do not expect any reinforcing effect of PIU for emerging adult consumers.

Thus, we propose the following:

H_{1b}: PIU 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 and Cryder 2016, p. 107). Examples are charitable giving (Small and Cryder 2016) or purchasing products that “benefit a good cause” (Cavanaugh, Bettman, and Luce 2015, p. 657), such as sustainable, eco-friendly goods (e.g., Seegebarth et al. 2016).

Prosocial consumer behavior is a relevant issue for consumer research, particularly in light of the recent surge of these behaviors among consumers as part of a broader, increasing orientation of consumers toward behaviors such as donating, volunteering (e.g., Septianto et al. 2018), and more broadly assisting others (e.g., Ross and Kapitan 2018). Prosocial consumer behaviors may include behaviors such as making

monetary donations or purchasing goods and services that may help other people and/or the community, including 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, Bettman, and Luce 2015). Accordingly, most of the existing research has concentrated on identifying the antecedents and the outcomes of prosocial consumer behavior (e.g., Small and Cryder 2016; White, Habib, and Dahl 2020). With regard to the antecedents of prosocial consumer behavior, research has suggested several motivating factors that may encourage individuals to engage in prosocial consumer behavior (for a review, see Small and Cryder [2016]): these include, for instance, extrinsic rewards, hedonic motives (e.g., pursuing pleasure), and the avoidance of negative feelings (e.g., guilt; Peloza, White, and Shang 2013). Notably, external factors, such as exposure to marketing actions aimed at reinforcing cause-related consumer sensitivity, may sustain pro-environmental consumer choices as well (e.g., Chang and Chu 2020; Shin and Mattila 2021).

Literature in psychology 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 and Li 2011). In this vein, research has shown that PIU directly affects well-being (Diener, Oishi, and Tay 2018) and that, under higher PIU, people move away from prosocial behaviors. For this reason, in this research we attempt to bridge this gap by taking a cue from the psychological literature, in which extensive studies have found that PIU has a negative effect on the behaviors and social relationships of adults and emerging adults. The suggestions from the 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 and advancing the following hypothesis:

H₂: PIU decreases prosocial consumer behavior for (a) adult consumers and (b) emerging adult consumers.

From Prosocial Consumer Behavior to Individual Well-Being

Extant research suggests that prosocial behaviors can deliver positive psychological outcomes. For instance, the 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 behaviors has suggested those behaviors as among those that have the most influence on individual well-being (Erfani and 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 and Steg 2018; Venhoeven, Bolderdijk, and

Steg 2020). Thus, engaging in prosocial behaviors leads individuals to feel better about themselves, thus enhancing their subjective well-being (Binder and Blankenberg 2017; Van der Werff and 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 generally, 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).

From the preceding discussion, we propose the following:

H₃: Engaging in prosocial consumer behavior positively affects individual well-being for both (a) adult consumers and (b) emerging adult consumers.

The Role of Online Social Support

Social support is considered to consist of the entire 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 that characterize the 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, and 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 and Harakeh 2018); the more they feel that they belong to a social group (feeling support from group members), the more they will be inclined toward prosocial behaviors.

In particular, if individuals perceive that they have strong online social relationships, they feel more appreciated, and their self-esteem increases; furthermore, their openness to other people improves, and as a result, they are more likely to engage in prosocial behaviors (Benvenuti et al. 2020). Thus, 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, they do not experience the distinction between online and offline networks of relationships; in other words, they are likely to live their life constantly online (Floridi 2015, 2021).

Thus, we propose the following:

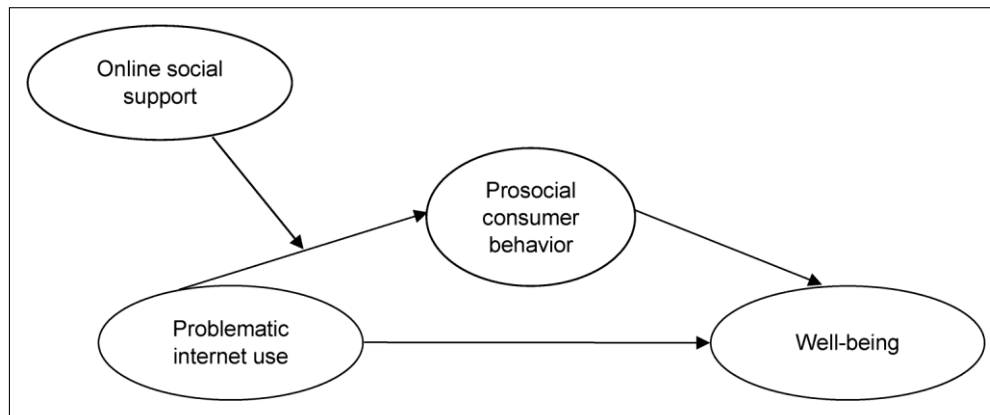


Figure 1. The Conceptual Model.

H₄: The negative effect of PIU on prosocial consumer behavior is weaker (stronger) when online social support is stronger (weaker). The effect holds for (a) adult consumers, but not for (b) emerging adults.

The conceptual model is depicted in Figure 1.

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 consumers in the United Kingdom were recruited. Study 2 tested the model on emerging adult consumers. Thus, 214 consumers were recruited. Again, respondents were sampled in the United Kingdom. In line with the theoretical background, the age thresholds were 18–29 years (Arnett 2018) for emerging adults and 30 years and over for adults (Arnett and Mitra 2020).

The questionnaire used measures for PIU (6 items) from Caplan (2010); prosocial consumer behavior (6 items) from Cavanaugh, Bettman, and Luce (2015); well-being (12 items) from Diener et al. (2009); and online social support (8 items) from Lin, Zhang, and Li (2016). All items were measured on seven-point Likert scales (1 = “Strongly disagree,” and 7 = “Strongly agree”). The items can be found in Table A.1 in the Appendix. Finally, respondents provided age and gender and then were thanked and debriefed.

Procedure

We used the PROCESS macro for SPSS 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 95% confidence intervals (CIs).

Results

Study 1: Adult Consumers

Measurement validity. Results from a confirmatory factor analysis (CFA) with AMOS 18 ($\chi^2/d.f. < 3$; root mean square error of approximation = .07; comparative fit index = .92) and Cronbach’s alpha ranging between .81 and .95 provide support for the validity of the measures

Anderson and Gerbing’s (1988) adequacy of measurements procedure was followed. First, the CFA 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 and 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 and 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, and inter-item correlation tables are in the Web Appendix.

Model estimation. As advanced in H_{1a}, 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 H_{2a}. In turn, prosocial consumer behavior positively affected well-being (Effect = .07; $p < .01$), as advanced in H_{3a}. 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 (H_{4a}) on well-being (Effect = .10; $p = .04$). This evidence supports the

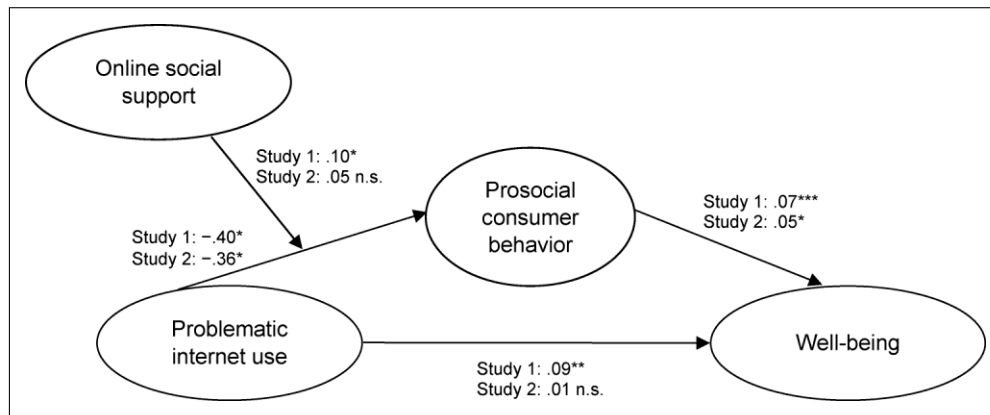


Figure 2. The Model with Estimates.
Notes: Study 1: N = 217; Study 2: N = 214.

moderation of online social support as hypothesized in H_{4a}. The index of moderated mediation was significant, as the 95% CI excluded zero (Effect = .007, 95% CI = [.00, .02]).

Study 2: Emerging Adult Consumers

Measurement validity. Again, results from a CFA with AMOS 18 ($\chi^2/d.f. < 3$; root mean square error of approximation = .072; comparative fit index = .97) and Cronbach's alpha ranging between .74 and .94 provide support for the validity of the measures. Anderson and Gerbing's (1988) adequacy of measurements procedure was followed as in Study 1. The CFA again supports the convergent validity of the measures: the CR and the AVE exceed the .7 and .5 thresholds, respectively (Fornell and Larcker 1981). Specifically, in Study 2, the minimum CR is .86, and the minimum AVE is .52.

The test of discriminant validity (Fornell and Larcker 1981) confirms discriminant validity in Study 2, as the lowest AVE (.52) exceeds the highest squared correlation between any two variables (.03). These findings corroborate that the measurement model meets all relevant psychometric properties. Details are provided in Tables A.1 and A.2 in the Appendix, and inter-item correlation tables are in the Web Appendix.

Model estimation. As advanced in H_{1b}, 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 H_{2b}. In turn, prosocial consumer behavior positively affected well-being (Effect = .05; $p = .04$), as advanced in H_{3b}. 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 (H_{4b}) on prosocial consumer behavior (Effect = .05; $p = .25$). This evidence supports H_{4b}. Finally, as for Study 1, the index of moderated mediation was significant, as the 95% CI excluded zero (Effect = .003, 95% CI = [.00, .01]). The results of the PROCESS macro are shown in Figure 2 and Table 1.

Discussion

This research addressed internet use and prosocial consumer behaviors, examining their impacts on individual well-being (Akcin 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 influence consumer well-being (Anisman-Razin and Levontin 2020; Çikrikci 2016).

The findings of the present research validate those 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. That is, PIU may not be simply a direct source of lower individual well-being (as suggested in the psychology literature) but also an indirect one, by discouraging certain behaviors that otherwise would positively contribute to consumers' well-being (i.e., prosocial ones) (Joireman and Durante 2016; Kasser 2014). Furthermore, the findings demonstrate that online social support may partially offset the negative effect of PIU on prosocial consumer behaviors; that is, when individuals perceive that they are socially supported online, this may reduce the negative influence of PIU 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 about consumers' use of technology and their choice of 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"

Table 1. Model Estimates.

	Hypothesis	Group	Coeff.	SE	t	p	95% CI	
							Lower Limit	Upper Limit
PIU on prosocial consumer behavior	H _{2a}	Adults	-.39	.17	-2.35	.02	-.73	-.06
	H _{2b}	Emerging adults	-.36	.15	-2.33	.02	-.67	-.05
Moderation of online social support	H _{4a}	Adults	.10	.05	1.99	.04	.001	.199
	H _{4b}	Emerging adults	.05	.04	1.16	.24	-.03	.13
Prosocial consumer behavior on well-being	H _{3a}	Adults	.07	.026	2.80	.005	.021	.12
	H _{3b}	Emerging adults	.05	.02	2.03	.04	.001	.10
Direct effect	H _{1a}	Adults	.09	.026	3.47	.000	.03	.14
	H _{1b}	Emerging adults	.01	.024	.75	.45	-.03	.066

(White, Habib, and Dahl 2020, p. 12). In doing so, it examines the relationships between technology usage, prosocial consumer behaviors, and individual well-being (Cano Murillo, Kang, and Yoon 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, which is largely focused on specific kinds of products, services, and behaviors (Kadic-Maglajlic et al. 2019), such as fair-trade products (Andorfer and Liebe 2012; Basso, Bouill e, and Troiville 2021; Ladhari and Tchegna 2015) or pro-environmental behaviors (e.g., Han and Hyun 2017; Saracevic, Schlegelmilch, and Wu 2022; Soyezy 2012).

Second, the results advance the literature about the consumer-related effects of PIU. Although its behavioral outcomes are an established topic in the psychology literature, the marketing research on the impact of PIU on consumer behaviors and choice appears intrinsically limited, as it is focused only on specific consumption behaviors (i.e., compulsive buying behaviors; Bhatia 2019; Sun and Wu 2011). Thus, the present study enriches the marketing literature on consumer-related effects of PIU by showing that it is not only likely to encourage certain kinds of consumption behaviors; rather, it can also discourage consumption behaviors that may exert a key influence on consumers' well-being (Kashchuk and Ivankina 2015; Mundel, Yang, and 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, Habib, and Dahl 2020); on the other hand, it adds to the literature the finding that, in the case of online social interactions, their influence may differ according to diverse consumer segments.

Fourth, with respect to emerging adults, the results corroborate those of extant research observing that, because of having been raised in digital settings (Kirk et al. 2015), when it comes to considering interaction with digital environments, consumer behavioral dynamics of emerging adults are likely to differ from those of other consumers (Filho, Gammarano, and Barreto 2021; Lim et al. 2021), also in terms of prosocial consumer behavior. In other

words, the results advance the consumer literature about how consumer-specific characteristics of emerging adults (i.e., their specific approach to digital technology) may influence their prosocial consumption behavior. This finding is of particular importance for this consumer group: whereas, on the one hand, prior research indicates that prosocial consumer behaviors are "especially salient" (Kadic-Maglajlic et al. 2019) for emerging adults (e.g., because of their awareness and concern for the future of Earth; Johnstone and Hooper 2016), on the other hand, emerging adult consumers are 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 (Kadic-Maglajlic et al. 2019). Overall, these contributions carry potentially relevant practical implications, as detailed subsequently.

Managerial Implications

The present research carries some practical implications that may be of interest to both marketing practitioners and policy makers.

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., moral meaning; FairTrade 2022).

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 to marketers that, to promote prosocial behaviors, it may be relevant to provide 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, marketers could consider developing 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 whom 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, for them, the line between online and offline social relationships is blurred, if not inexistent. Interestingly, for emerging adults, PIU had a negative effect on well-being only through consumption. This finding suggests that policy makers should pay careful attention to the potential evolutionary patterns of these mechanisms, as (1) an increase in PIU in emerging adults may be more difficult to identify in a timely manner; 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 term, 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 has suggested that emerging adults and adults have different characteristics (Arnett and Mitra 2020) that may impact their likelihood of engaging 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, including the perception of future climate risks, are likely to decrease. Finally, future studies may consider possible differences in the proposed relationships for different kinds of prosocial behaviors, for instance, in terms of the varying amounts of effort and persistence required to accomplish them (e.g., Cavanaugh, Bettman, and Luce 2015).

Appendix

Table A.1. Measurement Items.

Measures, Scales, and Items	Loadings		CR		AVE			Cronbach's Alpha
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
PIU (adapted from Caplan [2010]) Please, evaluate your agreement with the following statements (1 = "Not at all true for me," and 7 = "Extremely true for me").			.88	.89	.59	.62	.82	.83
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 (adapted from Cavanaugh, Bettman, and Luce [2015]) Please report the likelihood you will engage in the following consumption behaviors over the next weeks (1 = "Extremely unlikely," and 7 = "Extremely likely").			.87	.86	.54	.52	.81	.74
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						

(continued)

Table A.1. (continued)

Measures, Scales, and Items	Loadings		CR		AVE			Cronbach's Alpha
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
Volunteer your time to a charitable organization benefiting local youth	.61	.65						
Refuse to buy a product if it is made using child or sweatshop 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, Zhang, and Li [2016]) Please, evaluate your agreement with the following statements (1 = "Strongly disagree," and 7 = "Agree").			.96	.95	.75	.73	.95	.94
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) 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 (1 = "Very rarely or never," and 7 = "Very often or always").			.96	.95	.64	.62	.94	.93
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						

Notes: SNS = social networking sites.

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			
		Emerging adults	3.31	1.23	1			
2	Prosocial consumer behavior	Adults	3.96	1.19	.004	1		
		Emerging adults	3.96	1.14	.03	1		
3	Well-being	Adults	3.88	.47	.04	.03	1	
		Emerging adults	3.89	.43	.0006	.02	1	
4	Online social support	Adults	3.03	1.49	.09	.001	.04	1
		Emerging adults	3.45	1.47	.03	.009	.0001	1

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