Chapter 9
Online Leisure and Wellbeing in Later Life

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9.1 Introduction

Over the past 20 years, most human-computer interaction (HCI) research on older people and digital technologies has focused on design-related matters, while scholars in other disciplines (gerontology, sociology, psychology, social work, nursing, etc.) explored the association between Internet use and subjective wellbeing (SWB) in later life. Overall, their findings provided considerable evidence demonstrating a positive association between these two variables.

Many of the studies on Internet use and SWB were cross-sectional, although some applied a longitudinal approach or experimental design and pointed to causality. For example, a study with a quasi-experimental design conducted by Shapira et al. (2007) showed that learning computer and Internet skills contributed significantly to seniors' SWB and sense of empowerment. Similarly, a longitudinal study performed by Cotten et al. (2014) demonstrated that Internet use significantly reduced the probability of depression. Based on such findings, scholars argued that Internet use may play a central role in successful aging.

Existing research, however, also includes conflicting findings that reveal negative associations (or none whatsoever) between Internet use and SWB in later life. Berner et al. (2012), for example, found no significant associations between Internet use and life satisfaction, and Slegers et al. (2008) discovered that learning to use the Internet neither positively nor negatively influenced elders' wellbeing and mood. Moreover, Choi and DiNitto (2013a) indicated that older Internet users had higher levels of depression and anxiety than non-users, and Matthews and Nazroo (2015) concluded

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that frequent Internet use was associated with more intense feelings of loneliness in later life.

One potential explanation for the inconsistencies in previous research may relate to differences in approach to Internet use measurement. Many studies considered Internet use a single activity, adopting a macro level view that could give rise to misleading generalizations. Different activities may yield diverse benefits and/or negatively affect participants. The macro approach conceals such distinctions, thereby limiting our understanding of the particular ways in which Internet use affects SWB. Other scholars limited their research to specific online activities (e.g., games, online communities and the like), applying a micro level outlook that ensures a deeper understanding of the benefits of such activities to older Internet users but precludes generalization.

To achieve a better understanding of the Internet's role in supporting wellbeing in later life, Lifshitz et al. (2016) suggested a functional approach, calling for simultaneous but separate examination of each of the principal online functions common among older adults (interpersonal communication, information, task performance and leisure). Using data collected online from Internet users aged 50 years and over, they revealed that all four online functions were positively correlated with life satisfaction and that task performance and leisure were negatively correlated with depression. After controlling for socio-demographic variables, however, only leisure associated significantly with the wellbeing measures. This finding suggests that previous studies on Internet use and SWB yielded contradicting findings because they overlooked use functions as perceived by users.

The online leisure function's significance to SWB is consistent with an extensive corpus of literature on the importance of leisure in later life. Numerous studies have shown that involvement in leisure activities exerts a major influence on older adults' physical, psychological, social and spiritual wellbeing and improves their self-image, sense of control and quality of life (for reviews, see Dupuis and Alzheimer 2008; Gibson and Singleton 2012). When adults retire from their jobs and their children leave home and start their own families, leisure may become more central as a life domain in which they find meaning. At some points, leisure may even constitute a highly significant factor in shaping older adults' sense of identity (Frazier et al. 2002) and its contribution to SWB may be greater than that of background factors such as poor health, low income or absence of spouse (Fernández-Ballesteros et al. 2001; Nimrod 2007). A recent study (Nimrod and Shrira 2014) showed that the significance of leisure to wellbeing increases throughout the later life course, suggesting that leisure may even constitute a resource for resilience in old age. At the same time, however, this study pointed out a paradoxical situation in which "the older seniors, who may benefit from leisure involvement more than their younger peers, are precisely the ones who face the greater number of constraints to beneficial use of leisure" (p. 106).

The Internet offers numerous leisure activities that can be performed indoors and require no physical effort, rendering them highly suitable for elderly persons who are physically constrained, lack mobility or feel anxious about leaving home. Moreover, most online activities are offered gratis (except for the initial costs of

purchasing an Internet-compatible device and acquiring Internet access). They are thus relatively affordable and may complement existing offline leisure activities, possibly compensating somewhat for activities older adults are no longer able to perform. These qualities, combined with the observation that leisure is the only online function associated with SWB among older Internet users (Lifshitz et al. 2016), call for further investigation of the contribution of online leisure to SWB in later life.

9.2 Three Pathways Towards Better Understanding

In an attempt to suggest new directions for HCI research among older people, this chapter posits three pathways towards a better understanding of the roles online leisure can play in older adults' SWB:

- **Simultaneous exploration of various online leisure activities**: Studying the online leisure repertoire of older Internet users may help differentiate among the activities in terms of contribution to SWB. Furthermore, it may enable exploration of associations among various activities, revealing the structure of individuals' repertoires, factors promoting or limiting participation and conditions predicting beneficial involvement. This path combines the functional approach suggested by Lifshitz et al. (2016) with the micro level approach, maintaining the advantages of both while allowing for some level of generalization.
- **Concurrent examination of online and offline leisure activities**: As older users of new media typically still use traditional media (e.g., TV, radio, print newspapers) and continue to be involved in offline leisure activities, studying their online activities alone reveals only part of their complete leisure repertoire, namely, activities one considers potentially usable during his daily leisure (Iso-Ahola 1980). Exploring associations between online and offline activities may clarify the extent to which online leisure displaces (or complements) the offline variety. This path challenges the traditional online-offline divide and suggests that online leisure activities may spill over to and/or display the effects of one's activities in the offline environment.
- **Differentiation among subsegments of older Internet users**: Older Internet users should not be studied as a homogeneous group, as physical, sociological and psychological variance increases with age (Yang and Lee 2009). Examination of various subsegments within the older audience may reveal which seniors are more likely to take part in online leisure activities, who is more likely to benefit from online leisure and the extent of overlap among these groups. In addition, such examination may reveal inequalities between older Internet users in terms of access, knowledge and skills, as well as disparities in terms of preferences and actual participation.

Adopting each of these paths or optimally applying them all in future research of online leisure and SWB in older adulthood may enhance our knowledge of the theoretical aspects of technology use and successful aging, while guiding future interventions, policies and technology development and design.

9.3 Applying the Three Paths

To demonstrate the efficacy of the three suggested paths, we used data collected in Israel during the first wave of the Ageing + Communication + Technology (ACT) cross-national study. Although data were gathered in seven countries, we decided to use information originating in one country only, avoiding analyses and interpretations irrelevant to the paths suggested in this chapter.

In this study, online leisure is understood as leisure activity that is performed online (Nimrod and Adoni 2012). Literature offers manifold definitions of leisure, and most scholars have emphasized its role in play, relaxation, entertainment, social connectedness and sensory stimulation (Stebbins 1997). The present study therefore only considers activities as leisure if they include recreational or entertainment aspects. Because they might be part of work-related activities, we excluded activities associated with communication (e.g. making phone calls, emails) or productivity (e.g. online errands, shopping). Even though these activities might be associated with leisure, we do not classify them as leisure activities in the context of this study.

9.3.1 Data Collection and Sample

The study was based on an online survey of 814 Israeli Internet users aged 60 years and over. A commercial firm that operates an online panel of 50,000 Internet users collected the data between November 2016 and January 2017. Study participants were sampled randomly from their age group and contacted by the firm via email with a link to the survey. Quotas were instituted to ensure that the sample is representative of the country's older online population (Israel Central Bureau of Statistics 2014). The first page of the online survey included a description of the research aims, as well as detailed instructions that participants were asked to read before filling in an online survey questionnaire, typically taking up 10–15 min of their time. To prevent repeat participation, each candidate was assigned a one-time personal survey entry code.

Participants' ages ranged from 60 to 87, with a mean of 66.93 years (sd = 5.55); 50.2% were male, 72.2% married and 87.8% had some post-secondary education. Forty-two percent reported having a higher than average income and 24.7% lower than average; 52.8% percent were retirees and 22.5% worked full-time. All participants were community-dwelling individuals: 61.1% lived in big cities or their suburbs, 23.9% in medium-sized or small cities and the remainder in rural areas (n = 814).

9.3.2 Measurements

The investigation was based on a specific part of the data that explored the participants' media use the day before they responded to the survey. Participants were asked to think about the previous day and report how much time they spent using various media. This part of the questionnaire was split into two sections: The first related to traditional mass media (e.g., TV, radio, newspapers) and differentiated between old media and digital/Internet-based use (via computer and cell phone), while the second considered various Internet-based activities (e.g., using social networking services [SNSs], reading and writing entries in forums and chatrooms and playing online games). Only activities clearly associated with leisure were selected and all others (e.g., emails, online errands) ignored. The following questions were used during data analysis:

- *Please think of yesterday: How much time did you spend on the following media?* Watched television on a tv set (flatscreen etc.), watched television on a computer (PC, laptop, tablet, etc.), watched television on a mobile phone (iPhone, Nokia, HTC, etc.), listened to radio on a radio set (FM, FAB, etc.), listened to radio on a computer (PC, laptop, tablet, etc.), listened to radio on a mobile phone (iPhone, Nokia, HTC, etc.), read newspaper and magazines in the print version (on paper), read newspapers and magazines on the internet (at websites or designated application), read books in the print version (on paper), read book in an electronic version (on a digital reader (Kindle etc.) pc, laptop, tablet, mobile phone, etc.), listened to audio books
- *How much time did you spend watching videos, DVDs, TV box, or hard disk recordings (approximately)?*
- *Please think of yesterday—and any use you made of the Internet yesterday. How much time did you spend on the following things?* Getting news (e.g. national newspaper), downloading music, films, or podcasts, playing computer games online, using chat programs (e.g., Skype, WhatsApp), reading entries at debate sites, blogs etc., using websites concerning my interests or hobbies, using social network sites (e.g., Facebook, LinkedIn), writing entries at debate sites, blogs, etc. (including your own)

The analysis also addressed responses to background questions exploring sex, age, marital status, place of residence, education, work status, monthly income, as well as participants' evaluations of their satisfaction of life and their health status on a ten-point Likert scale ranging from 1 ("not satisfied at all") to 10 ("very satisfied").

9.3.3 Data Analysis

Data analysis was conducted in four steps, the first being a factor analysis of the data describing time spent on online and offline activities the day before responding to the survey. For that analysis, we used principal components extraction and Varimax

rotation with Kaiser normalization. The accepted factors had an eigenvalue of at least 1.0 and reported factor loadings were at least 0.4. The six identified leisure factors were then subjected to cluster analysis, identifying groups of older Internet users with similar media-based leisure patterns. As most online and offline activities showed a high range with extreme values, the top five cases of each activity were set aside for the cluster analysis. The extreme-case filter was then applied in all subsequent data analyses.

In Step 3, we examined differences among the groups in life satisfaction and background characteristics, using cross-tabulations and chi-square tests, as well as one-way Analysis of Variance (ANOVA) and Bonferroni post hoc tests. In the fourth and final step, we conducted a multiple linear regression to explore leisure factors and background variables explaining life satisfaction in the current sample. Only background variables that reflected significant differences among clusters in Step 3 were included in the multiple linear regression model. Data were analyzed using SPSS V. 22 software; a confidence interval of 95% was maintained in all tests.

9.4 Results

9.4.1 Online and Offline Media-Based Leisure Activities

A total of 18 offline and online media-based leisure activities were included in the analysis (Table 9.1). Of the seven offline activities, watching TV on a conventional TV set was the most common activity, with 90.4% of the sample reporting participation in this activity the day before the survey. Watching TV was also the activity that occupied most of the participants' leisure time: On average, 3.3 h were spent doing so the day before the survey. Other offline activities commonly undertaken among sample participants were reading newspapers (77.5%, mean = 1.3 h) and listening to the radio on a conventional radio set (68.7%, mean = 2.4 h). Furthermore, almost half of the sample (46.2%) reported having read conventional printed books the day before the survey for an average of 1.7 h. Less common offline activities were watching videos or DVDs, as well as reading books in electronic versions and listening to audiobooks.

Obtaining news online (66.8%), using chat programs such as Skype and WhatsApp (65.7%), using SNSs such as Facebook (63.4%) and reading the online versions of newspapers that also exist in print (59.8%) were the most common online leisure activities among study participants. These activities were nearly as prevalent as certain offline activities, although participants engaged in them for shorter periods of time (0.9 h on average for obtaining news, using chat programs and reading online newspapers and 1.2 h on average for SNSs). Other activities involved significantly lower percentages of participants but extended over longer time periods, especially those associated with using digital devices to consume traditional mass

Table 9.1 Offline and online activities

	Activity	% of users	Mean usage time (St.D) in h	Range in h
Offline	1. Watching TV	90.4	3.3 (2.0)	0–20.5
	2. Reading newspapers	77.5	1.3 (1.2)	0–15.5
	3. Listening to the radio	68.7	2.4 (2.8)	0–24
	4. Reading printed books	46.2	1.7 (1.8)	0–20
	5. Watching videos and DVDs	20.1	1.9 (1.8)	0–18
	6. Reading books in electronic version	6.4	1.2 (1.1)	0–5
	7. Listening to audio books	1.7	1.0 (0.9)	0–3
Online	1. Getting the news	66.8	0.9 (1.5)	0–20
	2. Using chat programs	65.7	0.9 (1.4)	0–20
	3. Using social networking services	63.4	1.2 (1.7)	0–15
	4. Reading online newspapers	59.8	0.9 (0.8)	0–7
	5. Visiting websites concerning hobbies	44.5	1.1 (1.5)	0–18
	6. Watching TV	32.4	2.2 (2.8)	0–30
	7. Listening to the radio	26.6	2.4 (2.9)	0–20
	8. Playing games	26.2	1.3 (1.2)	0–9
	9. Reading entries in forums, blogs, etc.	26.2	0.7 (0.6)	0–3
	10. Writing entries in forums, blogs, etc.	11.2	0.9 (1.9)	0–17
	11. Downloading music, films, etc.	8.4	1.0 (0.9)	0–5

Note: N=814. For Watching TV online and listening to the radio online two variables were combined indicating the time dedicated to these activities using a computer and/or a mobile phone

media. The mean reported time for watching TV online, for example, was 2.2 h and for online radio listening 2.4 h (same as offline radio).

Reported participation in the various activities adds up to an average of 6.95 h for offline activities and 5.12 h online. In the concurrent examination, online and offline leisure activities were significantly correlated (Pearson's $r = 0.401$, $p < 0.01$), suggesting that online and offline leisure activities are not sharply differentiated from one another among older Internet users but rather complement each other.

9.4.2 The Structure of Online and Offline Activities

To enable joint analysis of older adults' offline and online leisure activities, a factor analysis of all 18 offline and online leisure activities was conducted, yielding six leisure activity factors. The percentage of variance explained jointly by these factors was 53.7. Cronbach's alpha for all those factors together was 0.536. The factors' internal consistency (Cronbach's alpha) and the activities included in each factor are indicated in Table 9.2 factor labels were discussed and resulted from the authors'

interpretation of common characteristics of activities in each factor, especially those with the highest loading.

Each of the factors showed, regarding their highest loadings, a tendency to be either offline or online. Three of the observed factors were interpreted as online leisure factors: Active online leisure, online updates and online content. Applying the functional approach (Lifshitz et al. 2016) to the functions of Internet use for older adults revealed that the factors serve different purposes in older users' leisure repertoires. Active online leisure contained activities that were relatively expressive and/or closely related to entertainment, including posting to debate sites and blogs, using hobbyist websites and playing online games. Online updates involved activities demanding considerable investment of time in social connectedness (using chat programs and SNSs) as well as obtaining news and watching TV online. These activities share the quality of "being on top of things" by staying connected with friends, family and current affairs. Online content consumption consisted of reading online

Table 9.2 Factors and factor loadings of online and offline media-based leisure activities

Factor (Eigenvalue) (alpha)	Activities included in the factor	Factor loading	Variance explained by factor
Active online leisure (3.093) (0.475)	Writing entries at forums, blogs, etc. (online)	0.776	17.2%
	Using websites concerning hobbies (online)	0.748	
	Playing games (online)	0.537	
	Watching TV (offline)	0.498	
Online updates (1.693) (0.673)	Using chat programs (online)	0.799	9.4%
	Getting news (online)	0.784	
	Watching TV (online)	0.649	
	Using social networking services (online)	0.563	
Offline content (1.524) (0.332)	Reading printed books (offline)	0.697	8.5%
	Watching videos or DVDs (offline)	0.680	
	Reading newspapers (offline)	0.596	
	Listening to the radio (online)	0.550	
Online content (1.254) (0.201)	Reading newspapers (online)	0.695	7.0%
	Downloading music, films etc. (online)	0.692	
Offline radio (1.086)	Listening to the radio (offline)	0.637	6.0%
Alternative books (1.008) (0.081)	Listening to audio books (offline)	0.703	5.6%
	Reading books in electronic version (offline)	0.585	

Note: N=814, Principal component extraction and Varimax rotation with Kaiser normalization. Factors included based on eigenvalue of at least 1. Only loadings of at least .4 are presented. The six factors explained 53,7% of variance. KMO=0,7

newspapers or downloading music, films, podcasts, etc. Un-like the two previous factors, this one entailed a more passive style of engagement.

Three offline activity factors were also indicated in the factor analysis, among which offline content explained the highest percentage of variance. Traditional media use, such as reading printed books and newspapers or watching videos or DVDs, were most dominant in this factor. Listening to offline radio was indicated as the second factor of offline leisure activities, and the third was a factor labeled alternative books, indicating reading/hearing books in new formats (e.g., ebooks, audiobooks)

Two of the six factors analyzed revealed a combination of offline and online activities: Watching TV was included in the active online leisure factor and listening to online radio in offline content. This finding may signify simultaneous involvement of older Internet users in both online and offline leisure activities and suggest that their online participation does not displace but rather complements their offline pastimes. Alternatively, it may be explained by high TV and radio use rates in both online and offline formats.

9.4.3 Clusters of Older Internet Users

The cluster analysis of the six factors of leisure activities produced an optimal solution of three clusters of older Internet users (see Table 9.3 for the standardized means of each leisure factor and the average overall time spent on online and offline activities in each cluster). The first cluster, Onliners, showed the highest involvement in online activities, including active online leisure as well as online updates and consumption of online content. Onliners were thus most active in all indicated online activity factors. This cluster described a group of relatively frequent users of the Internet for leisure, whose participation in offline activities was lower than the sample's average.

The second cluster consisted of older Offliners. Unlike the Onliners, they are highly involved in offline leisure factors, reporting an above (sample) average standardized score for offline content consumption and radio use. The third group—and least active in most leisure activity factors and in spending time on online and offline activities—was called Lighter Users. Alternative book reading/listening was the sole factor for which there were no significant differences among the groups.

The three clusters were not equally distributed across the sample. Lighter Users were by far the most prevalent group, accounting for 43.5% of participants. This does not imply, however, that a majority of the sample reported low levels of engagement in leisure activities as a whole, as even Lighter Users indicated that they used media for an average of 6.17 h the day before the survey. It is possible, however, that the role media (especially new media) use plays in their leisure is different and that they tend to engage in activities not covered by this study. Onliners constituted the second largest group in the sample, with 31.5% of participants, while Offliners—older adults primarily pursuing traditional media-related leisure activities—accounted for 25%.

Table 9.3 The three clusters of Internet users

Activities factor	Internet user cluster		
	Onliners	Offliners	Lighter users
	z-standardized means		
1. Active online leisure*	0.591[a]	0.085[b]	−0.476[c]
2. Online updates*	0.629[a]	0.076[b]	−0.499[c]
3. Offline content*	−0.161[b]	1.293[a]	−0.627[c]
4. Online content*	0.242[a]	0.070[a]	−0.215[b]
5. Offline radio*	−0.165[b]	1.105[a]	−0.516[c]
6. Alternative books	0.070	−0.013 means (h)	−0.043
Offline activities	6.966[b]	10.613[a]	3.975[c]
Online activities	6.795[a]	4.870[b]	2.199[c]
N	235	187	325
%	31.5	25.0	43.5

Note: Total N = 747, z-standardized means (total sample) for each factor, significant differences (*$p < 0.001$) were tested using one-way ANOVA, (a) (b) (c) mark significant ($p < 0.001$) differences between groups which were tested with Bonferroni Post Hoc tests. Offline and online activities were calculated by summing the time spent on seven offline and 11 online activities (see Table 9.1)

9.4.4 Background Characteristics of Older Internet User Clusters

Five background characteristics were significantly associated with the clusters of older Internet users: Place of residence, work position, family status, sex and satisfaction with health (Table 9.4). Onliners were characterized by being retired, unemployed or in an unpaid position (66.7%), however, most were retired (59.4%), at the time of the survey. They were also more likely to be single, divorced or widowed, live in a town or small village and report significantly lower satisfaction with health than members of the other two clusters. Although numerous studies display significant gender differences regarding media use among older adults, indicating that men have a greater tendency to use new technologies (Seifert and Schelling 2016), the Onliners in this study were mostly women. This may be the result of a work-related effect, as more females in the sample were not working (63.9% of women were retired, un-employed or in unpaid positions vs. 53.3% of the men, $p < 0.05$).

The Offliners' characteristics were similar of those of the sample as a whole and were only salient in the percentage of group members living in big cities or their suburbs. Lighter Users were characterized by a relatively high involvement in the workforce; they were more likely to be married, male and reside in rural villages than persons in the other clusters. They also reported the highest satisfaction with health.

Table 9.4 Background characteristics of Internet user clusters

Attribute	Category	Onliners	Offliners	Lighter users	All
Place of residence	Big city incl. suburbs	56.8%	64.3%	60.4%	60.2%
	Town or small city	32.1%	21.1%	22.0%	24.9%
	Country village	11.1%	14.6%	17.6%	14.8%
Work position	Full- or part-time work	33.3%	42.8%	43.9%	40.4%
	Retired, unemployed or in unpaid position	66.7%	57.2%	56.1%	59.7%
Family Status	Single, divorced or widowed	35.3%	28.3%	21.8%	27.7%
	Married	64.7%	71.7%	78.2%	72.3%
Sex	Female	56.6%	48.1%	44.6%	50.7%
	Male	43.4%	51.9%	55.4%	49.3%
Health	Mean	6.6	6.8	7.0	6.8

N = 747, Chi-squared statistics were significant ($p < 0.05$) for all attribute category cross-tabulations. Health was tested using one-way ANOVA and was approaching significance ($p < 0.1$)

Contrary to studies pointing to high associations among Internet use, education and income (e.g., Choi and DiNitto 2013b), the present study found no significant correlations between cluster type and income or level of formal education. Two explanations may be advanced: First, the present study focused on differences among older Internet users, not a comparison between users and non-users. While income and education differences in older adults might affect older adults' access to and competence in Internet use, differences among users would not. Second, as the older Internet users in this study participated in an online survey, the sample itself was probably biased towards the more tech-savvy users and thus may be perceived as selective regarding income and education.

9.4.5 Life Satisfaction Differences

We conducted a one-way ANOVA to determine the connection between older Internet users' offline and online leisure involvement, analyzing differences in life satisfaction among the various clusters. No significant differences were found among the three groups despite their differential involvement in offline and online leisure activities. Analysis of background characteristics in the three clusters, however, might point to a balancing mechanism wherein high involvement in beneficial leisure activities could

Table 9.5 Linear regression analysis of respondents' background and online and offline activity factors with life satisfaction

Variable	Unstandardized coefficient	Standard error	Standardized coefficient
	B		β
Constant	3.464	0.364	
Active online leisure	−0.018	0.023	−0.025
Online updates	0.045	0.022	0.069*
Offline content	0.082	0.028	0.148**
Online content	−0.019	0.070	−0.009
Offline radio	−0.078	0.039	−0.101*
Alternative books	0.264	0.171	0.048
Place of residencea			
- Town or small city	0.178	0.123	0.046
- Country village	0.147	0.150	0.031
Work Status (Retired)	0.034	0.054	0.020
Family Status (Married)	0.515	0.119	0.138***
Sex (Female)	−0.205	0.108	−0.061
Health	0.461	0.025	0.565***

[a]Reference: City or Suburbs. R2 = 0.370; N = 692; F = 33.277. *p < 0.05, **p < 0.01, ***p < 0.001

compensate for factors that affect SWB negatively, thereby engendering similar life satisfaction levels across clusters.

To test these possible balancing effects, a multiple linear regression analysis was conducted to simultaneously explore associations between involvement in offline and online leisure activities, as well as participants' background and life satisfaction (Table 9.5). Three media-based leisure activity factors significantly associated with SWB: Two (online updates, offline content) associated positively with life satisfaction and one (offline radio) negatively. Of the three factors, offline content showed the strongest correlation with life satisfaction. Two of the socioeconomic background variables analyzed associated significantly and positively with subjective life satisfaction: Being married and reporting greater satisfaction with one's health. The latter variable was the most dominant factor in the regression model, with an effect size larger than for family status and all leisure factors.

Overall, the analysis confirmed the suggested balancing effect, indicating that the Onliners' involvement in online updates compensates somewhat for their lack of a partner and lower satisfaction with health. Furthermore, the negative effects of the Offliners use of offline radio are balanced by the positive effect of their consumption of offline content. Lighter Users' low involvement in beneficial leisure activities, in turn, is balanced by their spousal relationships and good health.

9.5 Discussion

Although the study presented in this chapter was inevitably limited to reported participation in media-based leisure activities in a specific cultural context, its findings ably demonstrate the value of the three proposed pathways in achieving a deeper understanding of the association between online leisure and SWB in later life, calling for reconsideration of the contribution of technology use to older adults' SWB.

The findings resulting from simultaneous exploration of various online leisure activities show that while some types of online leisure activities significantly associate with users' wellbeing, other activity types do not. This finding is consistent with Lifshitz et al.'s (2016) claim that not all online activities contribute to wellbeing in later life. Moreover, the observation that online updates are the only online activity factor associated positively with life satisfaction suggests that online activities that help maintain social connectedness have a greater impact on older adults' SWB than expressive activities, entertainment and enrichment. This finding is congruent with previous evidence of the beneficial effects of social involvement and essentiality in later life (Gibson and Singleton 2012; Nimrod 2007), leading to the conclusion that the impact of media-based leisure activities on SWB does not depend on medium type (offline or online) but rather on the purpose they serve.

This conclusion is further supported by concurrent examination of online and offline leisure activities: After controlling for background variables, only two activity factors, online updates and offline content, associated positively with life satisfaction. This observation confirms the well-established positive association between leisure and wellbeing in later life (Dupuis and Alzheimer 2008; Gibson and Singleton 2012), although three other factors did not associate with life satisfaction, indicating that not all online and/or offline activity types are beneficial. One factor, offline radio, even correlated negatively with life satisfaction. This might be explained by the specific radio programming in Israel includes frequent news reports that can be disturbing. Further exploration of this phenomenon is required, however, as other types of news consumption examined in the current study did not reflect such negative correlation with SWB.

The concurrent examination also demonstrates that offline and online leisure activities are not disparate segments of older adults' media-based leisure repertoires but are significantly correlated with one another. Furthermore, although the six activity factors were generally divided between offline and online activities, some included both types, demonstrating that users' online activities are embedded and influenced by their involvement in offline activity. These findings support research (Nimrod and Adoni 2012) that conceptualizes online leisure as an extension of the offline variety, challenging the traditional online-offline divide. Older adults now live in increasingly mediated environments that are shaped by both offline and online content. Consequently, their SWB is not determined by involvement in one specific activity or the other, but rather by simultaneous involvement in several offline and online activities.

Differentiation among subsegments of older Internet users supports previous arguments regarding the heterogeneity of the older population (Yang and Lee 2009) and emphasizes the importance of older adults' social circumstances for technology

use in later life (Righi et al. 2017). Results point to three types of older Internet users: Onliners who participate predominantly in online leisure activities, Offliners who display greater involvement in offline activities and Lighter Users who are less involved in media-related leisure activities but may engage in other leisure and work-related pastimes. As these groups of users differ considerably in background characteristics, including place of residence, work position, family status, sex and health, the findings—like those of numerous studies on offline leisure (Gibson and Singleton 2012)—suggest that seniors' backgrounds significantly shape the extent to which they are involved in online and offline leisure activities.

As demonstrated in previous research (Fernández-Ballesteros et al. 2001; Nimrod 2007), this study confirms that certain online and offline leisure activities may balance the impact of various distressing conditions in later life, supporting Nimrod and Shrira's (2014) perception of leisure as a resource for resilience in old age. The balancing mechanism is particularly noticeable among Onliners, whose marked involvement in online activity appears to compensate for the negative effects of lack of partner and poorer health. As both background variables may limit benefits derived from various offline activities, the results also demonstrate how online leisure may serve as a means for negotiating age-related constraints to offline leisure.

Overall, this study suggests that the association between Internet use and SWB in later life depends on the functions the Internet serves for older users, its role in their overall media and leisure repertoire and various background variables affecting access to and competence in media use. As online leisure clearly correlates with offline leisure routines and practices, it should be regarded as part of seniors' leisure repertoire—a behavioral construct that is shaped by an extensive variety of factors, including interpersonal characteristics (e.g., socio-demographic background, personality), interpersonal circumstances (e.g., social networks, opportunities for leisure activities in the community) and cultural contexts (Iso-Ahola 1980).

In conclusion, the present study offers a detailed analysis about the determinants of online leisure and its association with wellbeing in later life. Parts of these findings might be leading future studies on technology use of older adults, may it be in the context of digital making or technologies for ambient and assisted living. Future re-search in these fields should take these factors into consideration when applying the three pathways for better understanding of the roles online leisure plays in seniors' SWB, carefully examining the different functions, meanings, and potential benefit and harm resulting from new technology use among differentiated groups of older adults.

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