Older adults' parasocial interaction formation process in the context of travel websites: The moderating role of parent-child geographic proximity

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HIGHLIGHTS

- This study developed a conceptual model of older adults' parasocial interaction with travel websites.
- Older adults' subjective age identity and innovativeness influenced their PSI with travel websites.
- Moderating role of parent-children proximity was verified.
- The relationships among older adults' PSI, perceived well-being and WOM were identified.

ARTICLE INFO

ABSTRACT

This study aims to identify the effects of age identity and innovativeness on parasocial interaction (PSI), and the moderating effect of parent-children proximity between age identity and PSI, and to examine the causal relationships between PSI, well-being and word-of-mouth (WOM). A sample of 271 U.S. residents aged 50 and older were recruited through an online survey company. The conceptual model was developed and tested using the structural equation modeling (SEM) technique. The results found that psychological and physical age have positive effects on PSI, whereas social age has a negative one. Importantly, innovativeness had a negative impact on PSI regardless of the age identity. The psychological and social age induced PSI to a stronger extent when the children lived out of state. Finally, PSI was found to lead to well-being and WOM, whilst well-being itself had a positive effect on WOM. The managerial implications and future research directions are discussed.

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1. Introduction

With the advent of Information Communication Technologies (ICT) in tourism (Buhalis & Law, 2008), the travel and tourism management literature has focused attention not only on travel website quality and its effects on online users' perception toward the site, but also on the influence of online reviews on firm performance (Ho & Lee, 2007; Kim, Kim, & Han, 2007; Nguyen & Coudounaris, 2015). Likewise, prior research has shown that when visiting travel websites owned by online travel agencies and associated service providers such as TripAdvisor, website design is one of the important factors influencing consumers' online shopping experience. Furthermore, as interactive websites such as TripAdvisor embed a range of information, including user-generated contents such as online reviews to attract customers (Bussgang, 2012), factors affecting the online review process and their effect on behavioral intention have also been of considerable interest to recent tourism researchers (Liu & Zhang, 2014; Sparks & Browning, 2011).

However, it was not until recently that several researchers began to focus on consumers' interaction with the website and other customers during the virtual service encounter (Kah, Lee, & Chung, 2010; Tsiotsou, 2016). It is noted that on a website, people may experience a one-sided interaction, that is, parasocial interaction (PSI), in part owing to material presented on the website in a variety of contents including textual, visual and multimedia information, as suggested by 'a flow experience' (Bilgihan, Nusair,

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Okumus, & Cobanoglu, 2015), and so-called 'transportation into narrative worlds' (Brown, 2015; Green, 2004). The recent literature highlighted that media viewers may interact with real or fictional characters who appeared in the media throughout the audience involvement process (Brown, 2015; Fu, Ye, & Xiang, 2016). In contrast, Hoerner (1999) suggested that whereas the website may be interpreted as a persona, the persons using commercial websites are likely to be influenced by a range of different parasocial signals such as tone of textual information, the developed character and e-mail interaction with the persona. Importantly, Novak, Hoffman, and Yung (2000) emphasized the importance of providing a compelling online experience for consumers, where the concept of the flow experience is at the center of their model rather than the functional experience.

Given the increase in the advent of interactive websites (Hoffman & Novak, 2009; Ngai, Moon, Lam, Chin, & Tao, 2015), some research highlighted that one of the important aspects of online consumers is the influence of parasocial behavior noticeable during the passive consumption (e.g., observation, listening/ reading comments, etc.) on the sites, which in turn leads to consumers' social behavior such as group engagement (Tsiotsou, 2016). Although there has been some research into PSI in the context of a virtual environment (e.g., Keng & Ting, 2009; Keng, Ting, & Chen, 2011) and media-induced tourism (e.g., Fu et al., 2016), older adults are still one of the neglected segments for this research context (Chory-Assad & Yanen, 2005).

This paper argues that older adults may be more attuned to parasocial behavior on travel websites rather than reciprocal social interactions due to several restraints such as a decrease in their psychological and physical capabilities, along with a limited level of social relationship (Lim & Kim, 2011; Mathur & Moschis, 2005). However, there is limited academic research on older adults' online shopping experience in travel websites despite an increasing proportion of older adults using the internet (Pew Internet and American Life, 2014; Li & Liu, 2014) and the emergence of the so-called 'new-age elderly', one of whose characteristics is "pursuing experience-rich products and services—especially travel and cultural events" (Schiffman & Sherman, 1991, p. 190). Specifically, there is limited understanding of the antecedents of older adults' PSI with websites (PSI-Web) in the context of online travel shopping. More importantly, although older adults were found to show different behaviors and attitudes toward their lifestyles (e.g., Mathur, Sherman, & Schiffman, 1998), most studies adopted the chronological age, which does not consider the older adults' individual differences depending on their life-position situations, when attempting to understand elderly behavior. Hence, the present study adopts the concept of age identity in order to address the effects of perceived age, that is, psychological, physical and social age, based on an evaluation of individual differences and social influences (Mathur & Moschis, 2005).

In addition, some previous studies paid attention to older individuals' characteristics, including their innovativeness (e.g., Lee, Qu, & Kim, 2007). Research on innovativeness (Sikkel, 2013; Szmigin & Carrigan, 2001) pointed out the importance of individuals' attitude toward innovative activities (i.e., such as trying online travel-related products) among the elderly. Whilst Sikkel (2013) highlighted that older adults are subjected to a reduced level of hedonic innovativeness and future time perspective, which led to older adults' strong relationship with a brand, Szmigin and Carrigan (2001) concluded that their older adults sample showed sufficient innovativeness to lead to the consumption of related innovative products and services. However, the influence of innovativeness on PSI has rarely been studied in the context of online travel shopping.

Furthermore, there is convincing theoretical and empirical evidence that the level of older adults' PSI is likely to be influenced by the parent-children proximity, one of factors influencing their social context, given that the characteristics of their social environment facilitate their involvement in PSI (e.g., Ball-Rokeach, 1998; Chattaraman, Kwon, & Gilbert, 2012). Although the social environment is directly associated with social relations, parent-children proximity went beyond older adults' psychological impact on their PSI with travel websites because parent-children proximity is not social presence on the website. It is our study's contention that parent-children proximity becomes a boundary condition for explaining older adults' proclivity to research travel products. Thus, if parent-children proximity influences the relationship between age identity and the level of PSI with travel websites should be thoroughly examined to understand social behaviors on websites in the process of purchasing travel products.

Finally, previous research on PSI examined its effects not only on psychological (i.e., satisfaction and well-being) (Gatto & Tak, 2008), but also on behavioral outcomes (i.e., purchase and WOM) (Ballantine & Martin, 2005; Lim & Kim, 2011; Skumanich & Kintsfather, 1998). Although researchers have paid much attention to the relationship between tourism-related goods and services consumption and well-being issues (Uysal, Sirgy, Woo, & Kim, 2016), the effect of PSI-Web in older adults who have various constraints related to travel on their well-being and WOM is poorly understood. In addition, the current research attempts to identify the importance of the online experience in producing well-being and WOM, where older adults' needs are gratified prior to embarking on the journey for the destination(s) (Uysal et al., 2016). This is a unique addition to the existing knowledge about well-being experienced during the pre-trip stage (Neal, Sirgy, & Uysal, 1999; Uysal et al., 2016) and, in particular, about the relationship between internet use and well-being.

To this end, focusing on elderly online users who purchased package tour products/services on travel websites, the present study attempts to contribute to a body of knowledge on older travelers' PSI-Web induced in the process of purchasing travel products, in particular, to the tourism management literature. Specifically, the results of this research are expected to shed light on the influence of older travelers' age identity and innovativeness on PSI-Web in the domain of tourism. Furthermore, the findings will contribute to the psychological and behavioral outcomes of PSI-Web in the context of online travel shopping. From a managerial perspective, this research is likely to enhance awareness of purchase behaviors in travel websites for the silver market, since the traditional online marketing has primarily focused on younger counterparts. Therefore, the current paper consists of the following sections designed to identify the structural relationships between the antecedents and consequences of PSI-Web, focusing on: first, the relationship between age identity (i.e., psychological, physical and social age) and PSI-Web; second, the relationship between innovativeness and PSI-Web; third, the moderating effect of child(ren)-parent geographic proximity between age identity and PSI-Web; fourth, the relationships between PSI-Web, well-being and WOM.

2. Literature review

2.1. PSI-web

The concept of PSI has been in the spotlight in the media and communication literature over the past several decades, as highlighted in Table 1, since it was first introduced by Horton and Wohl (1956, p. 215), who viewed it as a 'simulacrum of conversational give and take'. A range of seeming social relationships between a media viewer and a medium, initially coined by Horton and Wohl

Table 1
Previous PSI investigations: Research context and implications.

Indicative Authors	Research context	Research Design	Findings/Theoretical implications
Baek et al. (2013)	(P)SR on Social Networking Sites (SNSs)	Regression analysis of the sample of online panel consisting of 404 Koran adults	Positive association between dependency on PSR and loneliness, and negative association between PSR and distrust; Negative association between dependency on SR and loneliness, and positive association between dependency on SR and trust
Ballantine and Martin (2005)	PSI in online communities	A conceptual understanding of online community users' behavior using PSI theory	Mediated effect of PSI between online communities dependency and online community usage
Brown (2015)	Processes of audience involvement with media personae	Conceptual clarification of distinct processes of audience involvement	Processes of audience involvement comprising transportation, PSI, identification, and worship
Cummins and Cui (2014)	The actual experience of PSI among television viewers	Experimental investigation using a convenience sample of 154 students	Facilitating factors leading to TV viewers' PSI include bodily express and emotional contagion
Dibble et al. (2016)	An evaluation of the effectiveness of existing PSI measures in the context of video exposure	Experimental study of employing 383 respondents recruited via the Mechanical Turk	Effectiveness of the Hartmann and colleague's (2011) EPSI-Scale in measuring PSI
Fu et al. (2016)	The audience involvement effect on behavioral intentions in the context of reality show-induced tourism	Structural analysis of the sample of 355 respondents	Mediating effects of cognitive and affective destination image between audience involvement and behavioral intentions
Kassing and Sanderson (2009)	Fans' PSI/SI (Social Interaction) with cycling celebrity via a website	A thematic analysis of 1086 fan postings on the website of a sport celebrity	Fans' reactions to Floyd Landis, sport celebrity (i.e., a continuum of full personal interaction to an imaginary relationship)
Keng et al. (2011)	The relationship between PSI, Virtual Product Experiences and Sense of Virtual Community	Factorial online experimental examination employing 791 respondents	Moderating effect of PSI between virtual product experiences (i.e., escapism + social vs. aesthetics + information) and Sense of virtual community
Men and Tsai (2013)	PSI with SNSs	Structural analysis of an online survey recruiting 245 Chinese respondents	(In)direct effects of PSI, along with other indirect antecedents (social media dependency and community identification), on organization-public relationships through public engagement
Ngai et al. (2015)	A conceptual framework of social media applications, and tools and technologies	A critical literature review of social media research articles with case study	A diverse range of social media applications employing a variety of tools and technologies (e.g., media sharing, social bookmarking, virtual worlds, etc.) underpinned by personal, social behavior, and mass communication theories
Rubin and McHugh (1987)	Televised mediated communication	Statistical analyses (Path and Correlation) employing a sample of 303 undergraduate students	TV viewers' PSI and its antecedent (i.e., social/task attractiveness)
Skumanich and Kintsfather (1998)	TV shopping viewers' PSI with medium personae	A mail survey of 331 recent home shopping purchasers	Antecedents of purchasing behavior (TV and TV shopping viewers' relationships with the medium, shopping shows, and the genre personae)
Thorson and Rodgers (2006)	PSI with a political blog	Statistical analyses (Multivariate and Regression Analysis) of 69 undergraduate students	Perceived interactivity mediating students' attitude toward the website, the candidate, and voting intention via PSI
Tsiotsou (2016)	The effects of PSR (Parasocial Relationship) and SR (Social Relationship) on SBR (Service Brand Relationships)	Structural analysis of 285 soccer fans and 298 Facebook consumers	Parasocial (group identification) and social relationships (group engagement) effect on online and offline SBR
Tsiotsou (2015)	(P)SI with SNSs	Structural analysis using a convenience sample of 320 social networking sites users	Indirect effects of PSR (i.e., favorite SNS members' problem solving ability) on behavioral intentions/loyalty through SR

(1956) as PSIs, has been examined in traditional media contexts including on TV and the radio (e.g., Hartmann & Goldhoorn, 2011; Lather & Moyer-Guse, 2011; Lim & Kim, 2011; Rubin & Step, 2000).

This interaction is characterized by a one-sided and imaginary social relationship (Cohen, 2004; Fetscherin, 2014), which Horton and Wohl (1956, p.217) described as a situation, in which there is 'an illusion of intimacy' through an interaction between media personae and audience members.

Specifically, drawing upon the context of audience involvement, Brown (2015, p.259) identified a process of audience involvement with media personae as follows: transportation (i.e., involvement in the media), PSI, identification and worship. As the new communication method, e-commerce, emerges, several recent studies have highlighted a new area of research: PSI-Web (e.g., Eighmey & McCord, 1998; Kassing & Sanderson, 2009; Keng et al., 2011; Thorson & Rodgers, 2006). In this regard, Table 1 illustrates that the contexts of previous studies on PSI have been extended to virtual environments such as websites/blogs (Kassing & Sanderson, 2009; Keng et al., 2011; Thorson & Rodgers, 2006) and social networking sites (Baek, Bae, & Jang, 2013; Men & Tsai, 2013; Tsiotsou, 2015, 2016).

On the one hand, whilst a number of researchers have investigated PSI in an online context, others have focused on media users' underlining motivations, with particular attention to their usage and gratification perspective (e.g., Kaye, 2010; Sheldon & Bryant, 2016). The literature identifies the different influences of website context (i.e., the functions of a resource, types of interaction and levels of activities) on motivation for use (Levy & Windahl, 1985). For instance, the users of bulletin boards, emails and social networking sites may have different needs and expected sources of gratification (i.e., information seeking, communication and networking) (Kaye, 2010). Unlike commercial ones, some types of websites, such as bulletin boards and chat rooms, may serve as a platform for two-way interactions, due to their functions and

activities offered online (Kaye, 2010; Levy & Windahl, 1985).

On the other hand, in general, online consumers may interact with a website personality while engaged in a parasocial way (Hoerner, 1999; Keng et al., 2011). Hoerner (1999, p. 146) investigated consumers' interaction with commercial websites and highlighted the following factors influencing consumers' PSI with them: 'the design metaphor, flow of the website experience, and styles of textual and graphic presentations of the information'. The personality of a website is defined as 'the set of traits encompassing human characteristics and information technology features associated with it', including its 'intelligent, fun, organized, candid and sincere' aspects (Chen & Rodgers, 2006, pp. 49–50). Therefore, as with other parasocial studies, web-based PSI research may deal with an internet browser's illusionary interaction with websites. For instance, several studies addressed this web-based interaction, including the aspects of machine and interpersonal interactions (Hoffman & Novak, 1996; Keng & Ting, 2009; Keng et al., 2011). In the first place, people who visit websites may experience this 'machine interaction' by browsing and/or providing feedback; moreover, they are further engaged in an 'exchange of information' via interpersonal interactions (e.g., participation in a dialogue on a blog) (Keng & Ting, 2009).

Furthermore, Dedeke (2016) argues that website information and design lead people to be influenced by what Hoerner (1999) called 'parasocial signals' without traditional personae such as personalities of a newscaster and soap opera. Whilst Buhalis (1998) highlighted a wide range of online reservation systems, including Expedia, Kayak, TripAdvisor and Kelkoo, the travel and tourism management literature has paid considerable attention to how potential travelers and/or website visitors are influenced by travel websites while browsing them (Dedeke, 2016; Ert, Fleischer, & Magen, 2016; Mohd-Any, Winklhofer, & Ennew, 2015). Several researchers found positive influences of website design (e.g., graphic presentation on a hotel website) on the attitude toward the website (e.g., brand equity and trust, website quality) and behavioral intentions (e.g., travel motivation, purchase intention), drawing upon a functional and hedonic nature of travel websites (Bilgihan et al., 2015; Dedeke, 2016; Kah et al., 2010). Importantly, Bilgihan et al. (2015) emphasized a stronger positive effect of hedonic (e.g., thrilling) than utilitarian (e.g., functional) features in websites on brand attitude. As for consumers who visited an Airbnb website, the role of visual information such as the host's personal pictures alongside non-visual information was considered to be a significant factor in building trust (Ert et al., 2016). Another stream of research focuses on user-generated information on travel websites. Hence, for a TripAdvisor website, of special interest is the role of what McKercher (1999) called the communication vector, alongside searching for travel-related information and transaction online.

While addressing the emergent dimensions and consequences (i.e., group engagement/identification, loyalty) of PSI, previous studies have demonstrated an important role of PSI in the online context (e.g., Men & Tsai, 2013; Thorson & Rodgers, 2006; Tsiotsou, 2015, 2016). However, few web-based PSI studies have attempted to provide a structural understanding of the antecedents and consequences of PSI among the elderly, notwithstanding their growing attention to the virtual environment. Therefore, the next section addresses this issue, while developing relevant hypotheses.

2.2. Age identity and PSI-Web

Older adults may recognize different uses and derive different types of gratification from media use depending on their situation, such as their contextual age (Perloff & Krevans, 1987). For instance, employing the concept of contextual age, Papacharissi and Rubin (2000) found that if the individuals' age causes them to be dissatisfied with their life (i.e., their level of life satisfaction) and have difficulty communicating with others such as their family or friends (i.e., the level of interpersonal interaction), then they are more likely to pursue a functional alternative (i.e., interpersonal communication such as the Internet) rather than seeking information. This suggests that among the various types of internet use motivations, such as affection, inclusion, expression, social interaction, control and surveillance, the medium of PSI-Web may be used as a place of escape for people dissatisfied with their life.

Likewise, unlike some studies which adopted situational constraints such as social isolation, social activeness and/or self-reliance (e.g., Rubin & Rubin, 1982; Wenner, 1976) to explain media use, others (e.g., Perloff & Krevans, 1987) suggested that among the various psychosocial factors, parasocial preferences have a significant effect. This means that psychological/psychosocial factors relating to the individual's personality and lifestyle (i.e., emotional/social loneliness) tend to lead to parasocial relationships (PSRs) or PSI, although emotional loneliness was found to be the most powerful factor influencing several types of TV use (watching TV more, watching social entertainment programs, companionship, social stimulation and excitement) among the psychosocial variables. Perloff and Krevans (1987) argued that the addition of psychosocial (i.e., loneliness, locus of control, shyness/need for sociability, satisfaction with one's life, the self, and with relationships and the external environment) factors enables older individuals' media (i.e., television) use to be predicted more accurately. They empirically found that psychosocial variables were important factors affecting 'social entertainment program preferences, parasocial preferences and watching TV for companionship' (p.370), thus confirming the important role of psychosocial variables in accentuating the elderly's PSI.

Building upon the above, there is some evidence for an association between old subjective age and negative attitude toward life (i.e., low life satisfaction) (Teuscher, 2009). Thus, it may be inferred that there is an association between older adults' perceived psychological status (i.e., psychological age) and negative attitude results in PSI. Specifically, psychological age is related to older adults' perception of their associated cognitive capabilities, such as their perception, memory, judgment, reasoning and decision-making (Mathur & Moschis, 2005). For instance, when older adults perceive their ability to remember and/or to adapt to new situations to be relatively poor, they are likely to consider themselves to be psychologically old.

In general, older adults perceive their level of psychological status to deteriorate with age. In line with this argument, the socioemotional selectivity theory reasons that older adults with a limited time perspective prefer emotional activities rather than cognitively challenging tasks (Carstensen, Fung, & Charles, 2003). Whilst this perspective theorizes that older adults tend to spend time for leisure without a specific purpose (i.e., information search), previous studies strengthened this argument by showing older adults' tendency to use the media (e.g., internet, TV, etc.) for a specific motive (i.e., escape) (e.g., Papacharissi & Rubin, 2000; Rubin & Rubin, 1982).

More importantly, psychologically older adults would be expected to have a greater desire to escape, due to their perceived deteriorated level of cognitive capabilities, and this would lead to increased PSI (Cole & Leets, 1999). Since there are indications that psychologically older adults have a more negative perception of their life (e.g., Teuscher, 2009), as mentioned earlier, this may lead to different needs and gratifications, such as PSI, compared with psychologically younger elderly people. Indeed, internet-mediated communication enabled older adults to experience the social interaction that would otherwise be missing in their later life. As a result, when selecting tourism-related products, older adults who

view their psychological age to be old tend to resort to mediated communication (i.e., websites) rather than interpersonal communication, resulting in an illusionary interaction with the travel website's personae.

H1. A psychologically older age identity leads to a higher level of PSI when using travel websites.

In the course of life, individuals are likely to be confronted with increasing physical limitations, causing them to become aware of their so-called 'physical age'. Physical age is measured by several items describing an individual's physiological and/or physical indicators referring to their subjective age. For instance, some individualized questions include: "my physical appearance is most like that of people who are (age)" and "my physical senses such as my eyesight are most like those of people who are (age)" (Montepare, 1996). Hori (1994) addressed the physiological dimension of aging in terms of physical power being weakened, change in appearance and becoming ill. Similarly, older adults may perceive their age in consideration of their appearance, such as their body fitness and the changes in their attractiveness (Guiot, 2001; Teuscher, 2009).

Several researchers further investigated physical mobility in an attempt to understand older adults' attitude and behavior. For instance, a recent study by Lim and Kim (2011) found that older adults' lack of mobility leads to loneliness, which in turn causes PSI in the context of TV home shopping, although the compensational hypothesis regarding the effect of social isolation on PSI was not fully supported by previous studies (e.g., Chory-Assad & Yanen, 2005; Rubin, Perse, & Powell, 1985). The authors investigated the effect of shoppers' physical mobility on their need for social interaction, given that shopping may be able to provide an opportunity for social interaction. In contrast, older shoppers with shopping immobility were considered to pursue another solution to the situation they were confronted with (i.e., social isolation) via PSI. Hence, it is proposed that older adults' immobility is related to their exposure to alternative communication channels providing for interpersonal communication.

Although much attention has been given to televised contexts in the literature, older adults' intention to interact with media personae may also be applied to computer-mediated communication as well. Indeed, several studies paid attention to the influence of immobility on the adoption of computer-mediated media (i.e., the Internet) by older adults in order to maintain what they used to enjoy in the past, such as searching for information and entertainment, and shopping (McMellon & Schiffman, 2000; Trocchia & Janda, 2000). When it comes to the motivation for using the Internet, older adults are more likely to be susceptible to the desire for social and cognitive needs (i.e., sending an email and chatting with friends or others, searching for information/entertainment and finance) (McMellon & Schiffman, 2000). In addition, it was also theorized that older adults use the medium as a place of escape and relaxation, whereas interpersonal interaction is preferred in the case of comfort and pleasure (Barbato & Perse, 1992).

Specifically, older adults who may find interpersonal interaction difficult due to their physical immobility would like to engage in online communication, especially with the personality of the website, either emotionally and/or cognitively, while enjoying a sense of escape and relaxation. This is also supported by the model of media dependency effects (Ballantine & Martin, 2005), in that online community dependency caused by internet dependency and/or internet usage may give rise to PSI. Given that physically older adults are more likely to be dependent on Internet use due to their physical restrictions, they are more likely to be exposed to PSI. Therefore, it is hypothesized that.

H2. There is a positive effect of older physical age on the level of PSI with travel websites.

A considerable number of studies found a few similarities between PSR/PSI and social relationships (e.g., Cohen, 2004; Perse & Rubin, 1989; Rubin & McHugh, 1987; Rubin & Step, 2000). For instance, individuals, who are in contact with, or even separated from media characters, go through similar processes to the normal development/dissolution of social relationships, such as being intimate with others (Perse & Rubin, 1989) and maintaining (Tsao, 1996) or breaking up the social relationship (Cohen, 2003, 2004) with media personae.

Older adults experience a range of life-position events from a social perspective, which have been found to influence their self-perceived social age. According to the concept of social age identity (Tajfel, 1978), people may be attached to a specific age group, resulting in its associated values and emotions being produced throughout the process of building and maintaining relationships. Indeed, whereas all individuals possess their own reference group(s) such as their family, friends and other relevant groups, with whom they interact (e.g., Trocchia & Janda, 2000), older adults also have a younger orientation (i.e., aspiration to be younger) (e.g., Guiot, 2001). In attempting to belong to a younger age group, older adults with a young social age, who tend to under-estimate their subjective age, are likely to exercise a high degree of social interaction or interpersonal relationships.

More importantly, past research has confirmed that the way in which individuals are attached to others in reality affects the type of social interactions they prefer as well, that is, PSI (Cohen, 2004; Cole & Leets, 1999). Specifically, these previous studies highlight the fact that the way people interact with others (e.g., see Cohen, 2004; Cole & Leets, 1999 for anxious-ambivalent and/or the mistrusting secures) influences their level of PSI. It was noted that anxious-ambivalent adults tend to initiate a romantic relationship quickly (Hill, Young, & Nord, 1994; Hindy & Schwarz, 1994), experience some problems during the relationship (Feeney & Noller, 1990; Shaver & Hazan, 1987) and show emotional instability (Hindy & Schwarz, 1994), whereas those who are more secure tend to have a more positive attitude toward their relationships, maintaining an emotionally secure relationship (Cohen, 2004). It is more likely for individuals who are frequently faced with relational problems, pursuing social relations in spite of their insecure emotional status (i.e., anxious-ambivalent), to participate in PSI, as opposed to those who are void of any distress caused by breakup reactions despite their loneliness (Feeney & Noller, 1992; Pistole, 1995; Shaver & Hazan, 1987). In this way, it was found that these two different types of distorted social relationship (i.e., anxious-ambivalent and mistrusting secure), rather than social deficits such as avoidant individuals' loneliness, lead to PSI (Cohen, 2004; Rubin et al., 1985).

While older adults might have different so-called 'attachment figures' (e.g., living family, deceased family, friends, religious/health care figures, and animals), depending on the conditions they are faced with (i.e., loss of spouse), it can be inferred that older adults who are relatively comfortable with social relationship (i.e., socially younger older adults) are more likely to resort to computer-mediated communication, which involves a certain level of PSI. Hence, socially younger older adults are more likely to interact in a parasocial way, due to their dependence on their attachment figures (e.g., Cicirelli, 2010) and their sociability (i.e., secure and/or ambivalent-anxious individuals) through the medium, as mentioned earlier. Consequently, it is hypothesized that.

H3. Socially younger age identity leads to a higher level of PSI with travel websites.

2.3. Innovativeness and PSI-Web

Innovativeness among the elderly is one of the most interesting topics due to its potential for forecasting older consumers' behavior (Szmigin & Carrigan, 2000). A number of previous studies have investigated the concept of innovativeness and its importance in the domain of online travel shopping, adoption of technology (i.e., Internet) and online buying behavior (e.g., Agarwal & Prasad, 1998; Goldsmith, 2001; Lee et al., 2007); however, there has been a paucity of research investigating the level of older adults' innovativeness. When attempting to understand the concept of innovativeness, there is a need to consider the specific domain involved, because consumers' innovativeness does not apply in every situation (Goldsmith & Hofacker, 1991; Szmigin & Carrigan, 2001). Hence, Goldsmith and Hofacker (1991, p. 211) defined domain specific innovativeness as "the tendency to learn about and adopt innovations (i.e., new products) within a specific domain of interest". Szmigin and Carrigan (2000, 2001) supported the importance of older adults' innovativeness rather than younger age identity (i.e., cognitive age) in trying travel products including holidays and vacations, leading to an enthusiastic attitude toward trying new products/services.

Some research reported older adults' tendency to remain loyal to preferred old perfume brands (i.e., attachment) rather than to switch to other new brands (i.e., innovativeness) (Lambert-Pandraud & Laurent, 2010). Another previous study on new-age elderly (Mathur et al., 1998) provided some evidence that new-age elderly who are somewhat innovative (i.e., learning new things) are also likely to be characterized by attributes, such as being decisive (i.e., in making decisions), better off (i.e., better financial status), satisfied with their health and social life, and so on, thus tending to plan travel using a variety of information sources, including travel agents, travel videos, etc. In contrast, it was found that the traditional elderly, who tend to be less innovative in trying travel products, are more likely to use travel clubs, despite their lesser interest in travel activities compared with the innovative, decisive elderly (Mathur et al., 1998). Furthermore, as the social network of older adults tends to become more limited and denser with age (Carstensen et al., 2003), they are more likely to be exposed to interactive media (i.e., home shopping, travel websites, etc.), as suggested by some research (e.g., Lim & Kim, 2011; Mathur et al., 1998).

Importantly, as opposed to the concept of innovativeness, some research into the relationship between age and brand relations concluded that adults above 60 are more likely to be influenced by brand relations than those who are slightly younger (Sikkel, 2013). Specifically, whilst older adults over 60 may use what Sikkel (2013, p. 73) called 'simplified, schematized thinking' rather than innovativeness, due to their inability to be tolerant of tension and negativity, they may rely on brand relations, which is one example of PSI with an imaginary interaction with an object, when selecting products in domains such as automobiles, banking, mobile phones, audio/video, personal care, food and holidays. Additionally, although using advanced Web-based technologies (e.g., Webcams, virtual tours) in travel websites may not lead to online purchasing in travel or destination websites (Beldona, Kline, & Morrison, 2004), a recent study on personal innovativeness among Korean travelers reported that less innovative online travelers are more likely to be influenced by their attitude toward online travel shopping and referrals' opinions compared with their more highly innovative counterparts (Lee et al., 2007). All things considered, it is hypothesized that older adults who are not innovative when it comes to using travel products may be more dependent on social presence based on their relationship with a fictitious character, such as a web persona, in order to enjoy an imaginary interaction, rather than

making plans for adventurous leisure activities using different methods:

H4. Less innovative older adults are more likely to get involved in PSI with travel websites.

2.4. Moderating effects between age identity and PSI-Web

Whilst the previous argument predicted the effects of psychological, physical and social age on PSI, this effect is likely accentuated by the media users' contexts (e.g., Giles, 2002). For instance, whilst prior research into media dependency theory suggests that online community dependency is an important determinant of online PSI (Ballantine & Martin, 2005) it is worth noting that the level of media users' dependence on PSI is likely to be influenced by older adults' social contexts.

In fact, Ball-Rokeach (1998) stated that intensity (i.e., a perception of media utility), goal scope (i.e., understanding, orientation and play) and referent scope (i.e., the number of media forms) influence an individual's degree of dependency on media. Specifically, when older adults are not in direct contact with other people, such as family and friends, they are more likely to value using a travel website to satisfy their needs, such as escape and relaxation through PSI, although this is not the main motivation for interacting with the website persona. In particular, Rosengren (1986) asserted that a scarcity of social resources (i.e., loneliness) caused by social deficits causes individuals to have higher dependency on media usage. Furthermore, Rubin and Windahl (1986) illustrated the relationship between societal and mass media systems and audiences, which in turn affects whether the media user experiences dependency/non-dependency.

Clark and Wolf (1992) pointed out that the younger elderly tend to be further away from their children, whereas the older elderly need to live near their children, especially due to declining health (Glaser & Tomassini, 2000). Some intergeneration literature supports the relationship between spatial proximity, contact and intergenerational exchange (Rossi & Rossi, 1990; Bengtson & Roberts, 1991). For instance, Bengtson and Roberts (1991) confirmed a positive role of residential proximity in inducing parent-child association, by drawing upon the notion of opportunity structure for intergenerational interaction. In other words, several researchers focused on the critical role of proximate geographic distance between older adults and adult children in predicting the potential contact, which in turn leads to care and support (Bian, Logan, & Bian, 1998; Stuifbergen, van Delden, & Dykstra, 2008). Thus, building upon the uses and dependency model (Rubin & Windahl, 1986; Sun, Rubin, & Haridakis, 2008), it is suggested that geographic proximity between parents and children (i.e., living close vs living far), that is, the level of potential social relations, may influence the degree of psychological and/or social needs among older adults (i.e., instrumental and ritualistic dependency). The distance between parents and their children may be measured either objectively or subjectively; for instance, spatial proximity is often derived from the physical distance in kilometers, whereas temporal distance is referred to as the travel time between parents' and children's houses (Silverstein, 1995). Moreover, past research on geographic proximity emphasized the following three categories: co-residence, living close (normally within 10—16 km depending on the country), and living far (Glaser & Tomassini, 2000; Gillespie & van der Lippe, 2015; Lee & Hyun, 2015). It is possible that American older adults have a child living in a different state who is closer than another who lives in the same state. However, in general, it may be inferred that US-based older adults, none of whose children live in the same state, are more likely to be given limited support and care, as

opposed to those with at least one child living in the same state in the US.

Although some studies consider the absence of social support to be one of the barriers to older people's using the Internet, such as for online shopping (Chattaraman et al., 2012; Pew Internet and American Life, 2014; Li & Liu, 2014), other research highlighted older adults' growing tendency to depend on the technology (Gatto & Tak, 2008; McMellon & Schiffman, 2000; Pew Internet and American Life, 2014; Li & Liu, 2014) and/or PSI with media personae (Lim & Kim, 2011), when there is little social support to provide them with assistance (i.e., loneliness and/or shopping immobility). Hence, older adults who are dependent on the use of computer-mediated communication due to their social context are likely to experience PSI with media personae to a greater extent.

In summary, there is a strong indication that older adults are dependent on the Internet for various reasons (e.g., health, social interaction, searching for information, etc.) and that those who have limited support around them likely possess stronger needs and/or motivations for PSI-Web for various reasons; hence, when these older adults are far away from their children's place of residence (i.e., out-of-state), the effect of age identity on PSI will be increased due to the perceived distance. Thus, it is hypothesized that:

H1a. Children's perceived residence proximity to older adults moderates the relationship between psychological age and PSI with travel websites.

H2a. Children's perceived residence proximity to older adults moderates the relationship between physical age and PSI with travel websites.

H3a. Children's perceived residence proximity to older adults moderates the relationship between social age and PSI with travel websites.

2.5. Relationships between PSI-Web, well-being and WOM

The existing PSI literature confirms that attitudinal and/or behavioral outcomes are induced by PSI and/or PSR (e.g., Fetscherin, 2014; Hartmann & Goldhoorn, 2011; Lim & Kim, 2011; Men & Tsai, 2013). Indeed, as a result of a satisfactory experience during PSI, when using travel websites, older adults may express their own positive attitudes toward their relationship with a website persona such as well-being and WOM.

First, building upon the perceived Quality of Life (QOL) perspective, Grzeskowiak and Sirgy (2007, p. 291) define consumer well-being as "the consumer's perception of the extent to which a brand (a consumer good or service) contributes positively to various life domains, creating an overall perception of the quality-of-life impact of that brand".

In general, research into internet use has demonstrated its positive effect on psychological/mental well-being (Cotten, Ford, Ford, & Hale, 2014; Heo, Chun, Lee, Lee, & Kim, 2015; Shapira, Barak, & Gal, 2007). Specifically, the main areas to be considered for enhancing older adults' QOL may include satisfying some basic needs relating to their psychological/psychosocial and/or interpersonal motivations through mediated communication with characters from TV programs and TV home shopping hosts (e.g., Lim & Kim, 2011; Perloff & Krevans, 1987; Turner, 1993; Wang, Fink, & Cai, 2008).

With regard to the aforementioned areas, previous studies found some positive consequences of PSI, such as satisfaction, which may lead to well-being. Indeed, a number of researchers have noted media users' positive emotional reactions, such as

attachment and empathy, resulting from PSI (e.g., Derrick, Gabriel, & Tippin, 2008; Giles & Naylor, 2000; Giles, 2002; Lather & Moyer-Guse, 2011; Rubin & Perse, 1987). Furthermore, as a result of their media user-figure relations, it is more common for media users to experience some level of affinity, liking and/or affection (i.e., feeing embarrassed) for media figures as a result of PSI (e.g., Gleich, 1997; Lather & Moyer-Guse, 2011).

Likewise, whilst older adults may have different motivations for using the media (i.e., information seeking vs. a functional alternative/escape purpose) depending on their situations (e.g., life satisfaction, Rubin & Rubin, 1982), older adults are more likely to perceive their relative restrictions, including less satisfaction with their cognitive capabilities, physical immobility and reduced social relationships, compared to young adults. Thus, under these conditions, several studies have illustrated that some people, whose needs are characterized by escape from reality, are likely to be gratified through PSI-Web, due to their dependency on the mediated communication in order to obtain an alternative method of interpersonal communication (e.g., Papacharissi & Rubin, 2000; Rubin & Rubin, 1982).

Importantly, as far as research on well-being in the context of travel and tourism is concerned, Uysal et al. (2016, p.256) concluded that 'anticipating planning and anticipating the trip' increases tourists' well-being. Specifically, several researchers confirmed that those who took a holiday trip experienced happiness in advance of the actual trip, highlighting the significance of the pre-trip stage (Gilbert & Abdullah, 2004; Nawijn, Marchand, Veenhoven, & Vingerhoets, 2010; Uysal et al., 2016); however, there are inconsistent results regarding tourists' well-being after the trip (Gilbert & Abdullah, 2004; Nawijn et al., 2010). The comparison theory posited that people would feel better when planning a trip by comparing with those who are not expecting one, which was supported by prior studies (Gilbert & Abdullah, 2004; Nawijn et al., 2010). Importantly, Nawijn et al. (2010) alluded to the conclusion that anticipating a vacation makes vacationers feel happier than non-vacationers in support of the comparison theory; however, after the trip, there was no difference between vacationers and non-vacationers in terms of their happiness.

Additionally, older people with a higher level of PSI are likely to influence their travel motivations (Kah et al., 2010), which in turn leads to quality of life (Woo, Kim, & Uysal, 2016). On the one hand, prior literature also supported that older adults prefer emotional activities along with a narrower, but deeper social relationship rather than cognitively challenging tasks (Carstensen et al., 2003). On the other hand, prior research suggested that the interactive nature of some material presented on travel websites producing vividness, such as images and icons, spawned positive online experience. This also includes positive emotion about the destination (Bilgihan et al., 2015; Griffith, Krampf, & Palmer, 2001). Therefore, older adults are more likely to concentrate on some material stimulating emotive interaction, while using travel websites. This online experience produces positive effects on older adults' subjective well-being through online social support (Liu & Yu, 2013) and/or positive psychosocial effects such as affinity, liking and affection (Gleich, 1997; Lather & Moyer-Guse, 2011). Specifically, the involvement and concentration on the personality of travel websites during the PSI formation process (i.e., the flow experience and transportation into narrative worlds) make them experience the mental attitude that "nothing else matters but the shopping" (Bilgihan et al., 2015, p. 671). In a similar vein, a considerable body of literature confirmed the effect of the flow experience on psychological well-being through positive affect and/or satisfaction in interactive online markets (Chen, Wigand, & Nilan, 2000; Hoffman & Novak, 1996; Novak et al., 2000). Consequently, older adults' experience with using travel websites further

gratifies their social and/or psychological needs through PSI (i.e., affective, cognitive and behavioral interaction; Sood & Rogers, 2000). Hence, it is predicted that older adult's PSI, which is likely to occur at the pre-trip stage, leads to well-being.

Another behavioral outcome of PSI is WOM (word of mouth), whose importance is pointed out in the literature, particularly in a virtual environment (Kim & Son, 2009). In fact, numerous researchers have found a positive relationship between customers' satisfaction and WOM; in other words, when customers are satisfied with the service and/or products, they spread positive WOM (e.g., Li & Liu, 2014; Maxham, 2001; Van Dolen, Dabholkar & De Ruyter, 2007). Whereas some empirical PSI studies in the context of TV shopping demonstrated the significant effect of genre exposure through PSI on the resulting behavior (i.e., purchasing), leading to genre dependency (Grant, Guthrie, & Ball-Rokeach, 1991; Skumanich & Kintsfather, 1998), the media and marketing literature also supports the relationship between PSI and satisfaction, leading to WOM (e.g., Fetscherin, 2014; Lim & Kim, 2011). Specifically, Thorson and Rodgers (2006) found that undergraduate students had positive attitudes toward a website as a result of their PSI being influenced by its interactivity (i.e., hyperlinks on a website) and perceived interactivity (i.e., reciprocal and/or one-sided communication, that is, PSI). Likewise, given that older adults' PSI may induce emotional and/or cognitive attractiveness (Nabi, Stitt, Halford, & Finnerty, 2006) when using travel websites, this leads to WOM among older adults.

Finally, the resulting effect of older adults' PSI on well-being, in turn, leads to WOM. Research suggests that WOM is influenced by a positive evaluation of the services/products based on past experience (i.e., perceived usefulness, satisfaction, etc.) (Li & Liu, 2014; Maxham, 2001; Westbrook, 1980). In a similar vein, Kim, Jeon, and Hyun (2012) found that consumers who perceived a sense of well-being via a dining experience have strong behavioral intentions including WOM in the restaurant chain context. A recent study also found the direct and indirect effect of perceived usefulness on WOM (Li & Liu, 2014). Hence, older adults who reason that their QOL has improved due to their interaction with the travel website may be willing to spread WOM due to its perceived usefulness. Accordingly, the relationship between PSI, well-being and WOM is postulated as follows:

H5. PSI among older adults who use travel websites has a positive effect on their perceived well-being.

H6. Older adults' PSI with travel websites has a direct positive effect on WOM.

H7. Older adults' well-being positively influences WOM.

Based on previous studies, a research model was designed, as shown in Fig. 1.

3. Methods

3.1. Measurement instrument

The scale items used to measure the constructs proposed in this study were derived from validated and reliable multi-item scales reported in previous studies. The psychological age, physical age and social age were measured by adopting five, five and four items, respectively, from the study of Montepare (1996). The items used for age identity were assessed using a 5-point Likert-type scale with 1 indicating *a lot younger than my age* and 5 *a lot older than my age*. The items for innovativeness were drawn from Szmigin and Carrigan (2000). Among the original six items for innovativeness, three items were discarded because they did not load substantially on the construct based on the pre-test. Six items capturing PSI with travel websites were drawn from Hoerner (1999)'s PSI-Web scale. Perceived well-being was measured by four items derived from Grzeskowiak and Sirgy (2007) and Kim et al. (2012). The WOM measure involving four items was derived from Li and Liu (2014). These items were rated from 1 indicating *strongly disagree* to 5 *strongly agree* using a 5-point Likert-type scale.

Prior to the empirical survey, a pre-test was undertaken in order to develop measure clarity and check whether the items estimated the constructs substantially. Through the pre-test with 22 older adults who had purchased a travel package online, the initial questionnaire was revised and the final questionnaire was developed for the main survey (see Appendix B).

3.2. Sampling

Given that the main purpose of this research is to identify fundamental factors to generate older adults' PSI-Web in the
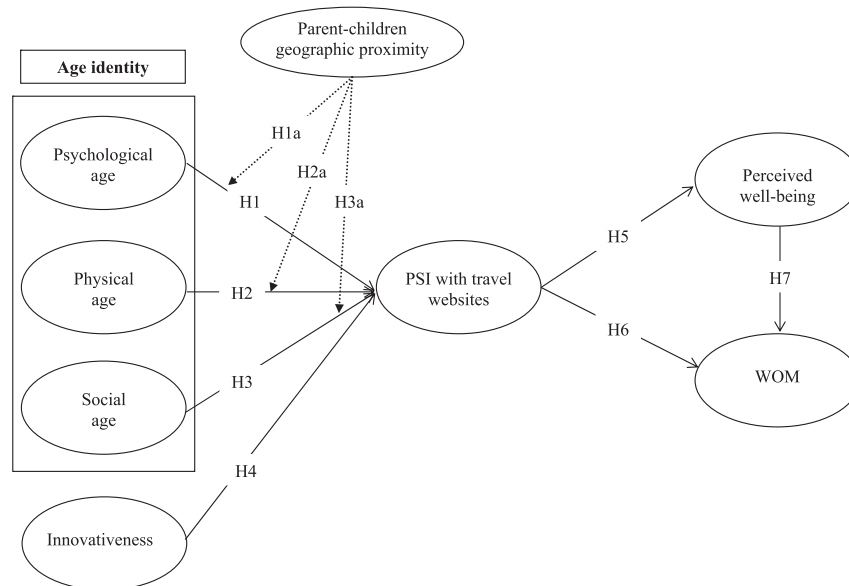
Fig. 1. Conceptual model.

process of purchasing travel products, targeting older travel website shoppers who are inhabitants of all 50 states in the U.S. was deemed appropriate. Since a number of North American researchers (e.g., Roberts & Zhou, 1997; Szmigin & Carrigan, 2001; Zhou & Chen, 1992) accepted older adults as those who are over 50, the cut-off age of older adults in this study was selected as 50. Specifically, to select qualified subjects for this study, two screening questions were provided. The first screening question, "Are you over 50?", was posed to the participants and only those individuals who answered "yes" qualified for the following questions. Then, the second screening question, "Do you use the internet to do research on travel?", was asked with the following three answer options: 1) Yes, and I have purchased a travel package/activity using a travel website; 2) Yes, but I have never purchased anything from a travel website; and 3) No, I have never used a travel website for research. About the second screening question, only those individuals who answered "Yes, and I have purchased a travel package/activity using a travel website." were eligible to answer the next questions. Older adults revealed their preferred online travel website for their holiday travel products and services: 26.9% of respondents preferred expedia.com, 14.8% travelocity.com, 9.6% kayak.com, and 8.9% tripadvisor.com (see Table 2). Regarding the questions on the online travel website, participants were asked to respond based on their experiences in their preferred travel website.

The web-based survey was conducted through an online research company with a large traveler panel database who distributed the questionnaire to older travelers for one week in March 2015. Of the 1000 questionnaires distributed, 884 older adults tried to participate in the online survey. Using the screening questions, 569 out of these 884 participants were disqualified for this research, so their survey was terminated. Each respondent who completed the survey was given a monetary incentive of $9.5. Among the 315 responses completed, 44 unusable responses (e.g., missing value or extreme answers) were excluded, resulting in 271 usable responses for further analysis.

4. Results

4.1. Demographic characteristics

The respondents' demographic information is provided in Table 2. The ages of the eligible respondents ranged from 50 to 80 years (M = 59.8 years), indicating that older adults who purchase travel packages/activities through websites are relatively young older adults. A majority of the sample (85.6%) indicated being Caucasian. In regard to education level, approximately half of the sample (51.3%) had a college or graduate degree, 33.6 percent reported high school diploma attainment or less, and 15.1 percent had a post-graduate qualification. According to the 2015 U.S. Census (Ryan & Bauman, 2016), 11.3% of the 65 and older age group held an advanced degree, 38.4% a college or bachelor's degree, and 34.6% a high school diploma. In the 45–64 years old group, 12.1% reported advanced degree attainment, 46.9% a college, associate or bachelor's degree, and 30.4% a high school diploma. The slightly higher educational attainment of the study sample than the general population shows that American older adults who use websites to purchase travel package are relatively well educated. Regarding their marital status, 58.7% were married, 20.3% were divorced, 14.0% were single, and 7.0% were widowed. 46.1% of them were male and 53.9% were female. 27.3% of the sample indicated that they had a yearly income from $60,000 to less than $80,000, 24.7% from $20,000 to less than $40,000, 22.1% from $40,000 to less than $60,000, 14.7% more than $80,000 and 11.1% under $20,000. In addition, 41.7% of the participants were employed and 32.1% were retired. Given that average retirement age by state in the U.S. is

Table 2
Profile of respondents (n = 271).

Variable	N	%
Gender		
Male	125	46.1
Female	146	53.9
Income		
Under $20,000	30	11.1
$20,000 - less than $40,000	67	24.7
$40,000 - less than $60,000	60	22.1
$60,000 - less than $80,000	74	27.3
$80,000 - less than $100,000	31	11.4
Over $100,000	9	3.3
Ethnicity		
Caucasian	232	85.6
Hispanic/Latino	9	3.3
Black/African-American	19	7.0
Asian American	6	2.2
Other	5	1.9
Education level		
High school diploma or less	91	33.6
College or university graduate	139	51.3
Post-graduate	41	15.1
Marital status		
Single	38	14.0
Married	159	58.7
Divorced	55	20.3
Widowed	19	7.0
Current employment		
employed	113	41.7
retired	87	32.1
semi-retired	16	5.9
homemaker	16	5.9
unemployed	11	4.1
disabled	23	8.5
other	5	1.8
Preferred travel website		
Tripadvisor.com	24	8.9
Booking.com	8	2.9
Expedia.com	73	26.9
Hotels.com	19	7.0
Priceline.com	19	7.0
Kayak.com	26	9.6
Orbitz.com	17	6.3
Travelocity.com	40	14.8
Hotwire.com	7	2.6
Other	38	14.0
Age (Mean = 59.8 years old)		

62–65 years based on 2015 U.S. Census Bureau labor force participation data, many in the 50 years and older group are employed in the U.S.

4.2. The measurement model

Based on Anderson and Gerbing's (1988) recommendation, two-step structural equation modeling (SEM) analysis was utilized to validate the measurement model and test the hypotheses. Before testing the proposed hypotheses, confirmatory factor analysis (CFA) was conducted in order to validate the measure. The model fit for the CFA was statistically acceptable (χ^2 = 851.915, χ^2/df ratio = 2.073, Incremental fit index [IFI] = 0.916, Comparative fit index [CFI] = 0.915, Tucker-Lewis index [TLI] = 0.904, Root mean square error of approximation [RMSEA] = 0.063).

All of the scale items revealed standardized factor loadings ranging from 0.563 to 0.898, as shown in Table 3, and all of the factor loadings were significant ($p < 0.001$). As shown in Table 3, the values of each construct's average variance extracted (AVE) were higher than the cut-off value of 0.05 (Fornell & Larcker, 1981), indicating that the convergent validity was confirmed. The discriminant validity was evaluated by comparing the AVE value of

Table 3
Confirmatory factor analysis: Items and loadings.

Items	Standardized loading
Age identity	
Psychological age	
My capacity to remember things is most like that of people who are …	0.646
My motivation to learn new things is most like that of people who are …	0.795
My capacity to learn things is most like that of people who are …	0.842
My capacity to adapt to new situations is most like people who are …	0.759
Right now I feel …	0.595
Physical age	
My physical appearance is most like that of people who are …	0.563
My physical senses, such as my eyesight, are most like those of people who are …	0.645
My physical abilities are most like those of people who are …	0.867
My physical activities are most like those of people who are …	0.842
My medical health is most like that of people who are …	0.752
Social age	
When I'm with my family I feel …	0.651
When I'm at work/school I feel …	0.652
When I'm with my male/female friends I feel …	0.862
When I'm with my partner/spouse I feel …	0.796
Innovativeness	
In general, I am among the last in my circle to visit a new holiday destination. [R]	0.716
Compared to my friends I do little holiday traveling. [R]	0.795
In general, I am the last in my circle of friends to know the names of the latest tours and holiday destinations. [R]	0.864
PSI with travel websites	
This travel website is interested in my opinions and comments.	0.772
I feel as if I am part of a close-knit group when I visit this travel website.	0.822
Visiting this travel website helps me form opinions about the topics and issues presented on this site.	0.787
The personality of this travel website is friendly and down-to-earth.	0.796
Visiting this travel website made me relax and have fun.	0.823
The personality of this travel website makes me feel comfortable, as if I am with friends.	0.822
Perceived well-being	
Using the travel website met my overall well-being needs.	0.780
Using the travel website played a very important role in my social well-being.	0.864
Using the travel website played an important role in my travel well-being.	0.773
Using the travel website played an important role in enhancing my quality of life.	0.843
WOM	
I would recommend the travel services of the travel website to people I know.	0.847
I intend to recommend the travel services of the travel website to people I know.	0.898
I would recommend the travel services of the travel website in an internet discussion forum.	0.763
I intend to recommend the travel services of the travel website in an internet discussion forum.	0.685

Note: All factor loadings were significant at $p < 0.001$; R reflects reverse-coded item.

each construct and the squared correlations between all pairs of latent constructs. All of the AVE values were higher than the squared correlations, except for the PSI with travel websites - well-being perception pairs, so the discriminant validity between the PSI with travel websites and perceived well-being was reevaluated. A chi-square difference test was performed between the uncombined model and combined model that was formed by merging the PSI with travel websites and perceived well-being. The result showed that the chi-square difference across the two models was significant (uncombined model: $\chi^2 = 851.915$, $df = 411$; combined model: $\chi^2 = 984.935$, $df = 417$; $\triangle \chi^2 = 133.020 > \chi^2_{0.05}(6) = 12.592$, $df = 6$), indicating that the two constructs were distinct. The values of the composite reliabilities for all of the latent constructs were greater than the cut-off value of 0.7 (Nunnally & Bernstein, 1994), satisfying reliability (Table 4).

Table 4
Descriptive statistics and associated measures.

		No. of items	Mean (std dev.)	AVE	1	2	3	4	5	6	7
1	Psychological age	5	2.59 (0.632)	0.537	0.895[a]	0.554[b]	0.579	−0.233	0.251	0.237	0.125
2	Physical age	5	2.86 (0.611)	0.551	0.306[c]	0.912	0.583	−0.269	0.242	0.188	0.167
3	Social age	4	2.65 (0.577)	0.556	0.335	0.339	0.906	−0.257	0.090	0.055	0.043
4	Innovativeness	3	2.71 (0.975)	0.630	0.054	0.072	0.066	0.803	−0.217	−0.151	-0.075
5	PSI with travel websites	6	3.24 (0.786)	0.646	0.063	0.058	0.008	0.047	0.926	0.824	0.792
6	Perceived well-being	4	3.17 (0.838)	0.665	0.056	0.035	0.003	0.022	0.678	0.894	0.723
7	WOM	4	3.43 (0.815)	0.643	0.015	0.027	0.002	0.006	0.627	0.522	0.883

Goodness-of-fit indices:
$\chi^2 (411) = 851.915$, $p < 0.001$, $\chi^2/df = 2.073$
CFI = 0.915; IFI = 0.916; TL I = 0.904
RMSEA = 0.063

Note: AVE = Average variance extracted; CFI=Comparative fit index; IFI=Incremental fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation.
[a] Composite reliability is indicated along the diagonal.
[b] Correlations are above the diagonal.
[c] Squared correlations are below the diagonal.

4.3. The structural model

To verify the hypothesized relationships across the latent constructs, a structural model was established. The structural model substantially fits the data, as accepted by the goodness-of-fit statistics: $\chi^2 = 860.252$, χ^2/df ratio = 2.053, IFI = 0.916, CFI = 0.915, TLI = 0.906, RMSEA = 0.062.

As illustrated in Table 5, all of the seven hypothesized relationships proposed in this study were supported. Specifically, the older adults' psychological age ($\beta = 0.219$, $p < 0.05$), physical age ($\beta = 0.187$, $p < 0.05$), social age ($\beta = -0.190$, $p < 0.05$) and innovativeness ($\beta = -0.151$, $p < 0.05$) significantly influenced their PSI with travel websites, as predicted. Thus, H1, H2, H3 and H4 were supported. The older adults' PSI with travel websites became a strong positive determinant of both their perceived well-being ($\beta = 0.825$, $p < 0.05$) and WOM ($\beta = 0.605$, $p < 0.05$), supporting H5 and H6.

The older adults' perceived well-being as a result of their interaction with the travel website was a positive predictor of WOM. Therefore, H7 was supported.

4.4. Moderating test

The moderating influence of children' residence proximity was analyzed by using multi-group analysis (Byrne, 2001). In order to investigate the difference across subgroups, the participants were divided into those individuals who live in the same state as their children ($n = 152$) and those with no child living in the same state ($n = 119$). The free and constrained models across the two groups were compared through a chi-square difference test based on the Anderson and Gerbing's (1988) recommendation.

First, the result of the moderating effect on the relationship between the psychological age and PSI with travel websites showed that there was a significant difference across subgroups ($\triangle \chi^2 = 4.710 > \chi^2_{0.05}(1) = 3.841$, $df = 1$). More specifically, for those subjects with no children in the same state, the link from psychological age to PSI with travel websites was positively significant ($\beta = 0.341$, $p < 0.05$), while there was no significant effect of psychological age on the PSI with travel websites for those subjects with children living in the same state ($\beta = -0.093$, $p > 0.05$). This result implies that for older adults who have no children living in the same state, the older the psychological age, the higher the level of PSI with travel websites. Therefore, H1a was supported.

Second, the difference across subgroups in the relationship between physical age and PSI with travel websites was not significant ($\triangle \chi^2 = 1.348 < \chi^2_{0.05}(1) = 3.841$, $df = 1$), indicating that H2a was rejected. Third, the chi-square difference test of the social age-PSI with travel websites link was significant across the two groups with ($\triangle \chi^2 = 4.577 > \chi^2_{0.05}(1) = 3.841$, $df = 1$).

In the group with no children in the same state, there was a negative relationship between social age and PSI with travel websites ($\beta = -0.326$, $p < 0.05$), while the impact of social age on PSI with travel websites was not significant for those with children in the same state ($\beta = 0.061$, $p > 0.05$). This finding indicated that for the group with no children in the same state, as the social age of the older adults is low, they develop PSI with travel websites. Therefore, H3a was supported.

The results of the model proposed in this study are illustrated in Fig. 2.

5. Discussion and conclusions

5.1. Discussion

Due to a paucity of empirical research on PSI with travel websites in the tourism management literature, this study investigated the antecedents and consequences of PSI among the elderly using travel websites. Specifically, the current study aimed to identify the effects of age identity (i.e., psychological, physical and social age) and innovativeness on PSI, investigate the moderating effect of parent-children proximity on the relationship between age identity and PSI, and examine the relationships between PSI, well-being and WOM.

First, this study found that psychological age has a significantly positive impact on PSI with travel websites among the elderly (0.219, $p < 0.05$). This indicates that psychologically older adults who are not satisfied with their psychological capabilities (i.e., low capabilities) would like to use online travel sites, interacting with associated website personalities. This finding strengthens the previous understanding that PSI builds upon older adults' psychosocial and psychological capabilities, in order to escape from reality rather than using the medium for an instrumental purpose (i.e., searching for the information) (Papacharissi & Rubin, 2000; Teuscher, 2009). However, this is interesting as one dimension of PSI is cognitive interaction (Giles, 2002; Sood & Rogers, 2000). Sood and Rogers (2000) found that people who viewed Hum Log, an Indian soap opera, engaged in cognitive interaction with characters in the program by writing letters, responding to the issues raised in the episodes. Likewise, Giles (2002) asserts that PSI needs to be understood at an individual's socially cognitive level, where an individual may interact with others using his/her imagination. In a similar vein, the current study demonstrated that psychologically older adults are found to interact with the personality of travel websites via imaginary communication on the travel websites, with using relatively limited psychological capabilities.

Second, the result of this study showed physical age has a significantly positive impact on PSI with travel websites (0.187, $p < 0.05$). This finding illustrates that older adults' physical conditions play a significant role in predicting PSI on travel websites.

Table 5
Standardized parameter estimates for the structural model.

|	Paths			Standardized estimate	t-value	Support
H1	Psychological age	→	PSI with travel websites	0.219	2.381	Yes
H2	Physical age	→	PSI with travel websites	0.187	2.044	Yes
H3	Social age	→	PSI with travel websites	-0.190	−1.988	Yes
H4	Innovativeness	→	PSI with travel websites	-0.151	−2.155	Yes
H5	PSI with travel websites	→	Perceived well-being	0.825	12.140	Yes
H6	PSI with travel websites	→	WOM	0.605	6.050	Yes
H7	Perceived well-being	→	WOM	0.224	2.346	Yes
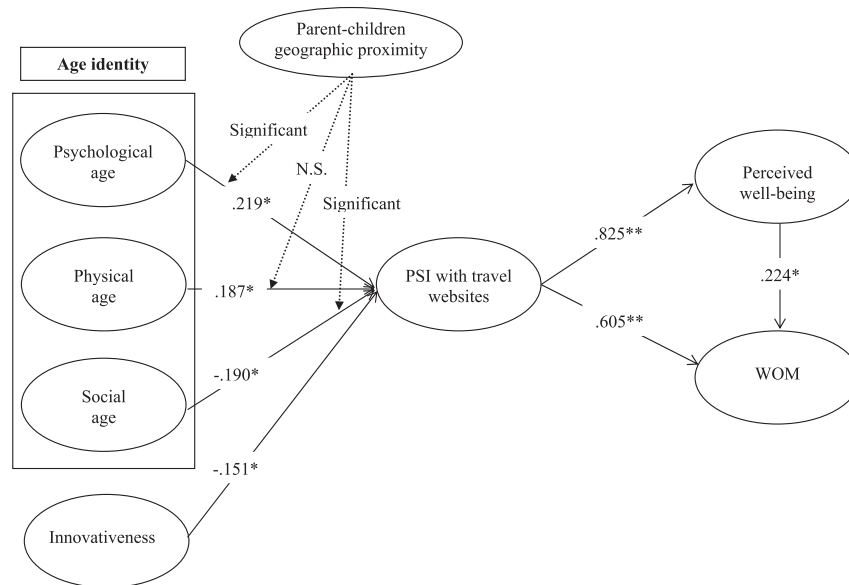
Fig. 2. Results.

Previous studies recognized that older adults should be given an appropriate level of support, especially in the case of physical immobility (e.g., Glaser & Tomassini, 2000); however, the current study's findings suggest that older adults, who perceive themselves to be physically old, may use the websites while browsing travel-related products and services, enjoying an illusionary interaction with websites. As prior research identified the important role of physical age in their lifestyle (Teuscher, 2009), the current study replicated the positive influence of physical condition on their adoption of alternative communication channels. In Lim and Kim's (2011) study, older adults with physical immobility used TV home shopping for social interaction due to their situational factors such as loneliness, whereas young adults with loneliness tended to get involved in social interaction online (Lee & Hyun, 2015). Likewise, it is noted that older physical age is likely to be positively associated with a functional alternative to interpersonal communication, given that such people may prefer online communication to a personal interaction in consideration of their situation, such as their attitude toward life (Teuscher, 2009).

Third, this study also found that social age negatively influences older adults' PSI with travel websites (−0.190, p < 0.05). This can be interpreted as meaning that when older adults are in a relationship with a younger reference group, they are more likely to interact with online travel website personalities. This finding is in line with previous works building upon the uses-and-gratifications perspective, which articulates the importance of social/psychological factors influencing media use (e.g., Cohen, 2004; Sheldon & Bryant, 2016). According to Ngai et al. (2015), people's motivations for, and behavior during, their use of social media were conceptualized at three different levels including personal behavior (personal characteristics, technology use and attitude/behavior), social behavior (social capital, cognitive, and loafing) and mass communication (PSI, and uses and gratifications)., In this regard, previous research on Instagram use also identified the impact of psychological and social situations (social activity, life satisfaction, and narcissism) on motivation for using social media (Sheldon & Bryant, 2016). Hence, the results strengthened the association between PSR and social relationships (see Cohen, 2004 for the detailed argument) via social age. According to Keng et al. (2011, p.2), PSI serves as an invaluable factor in predicting the effects of virtual product

experiences (i.e., interpersonal and machine interaction) on sense of virtual community (i.e., feelings of membership, influence and sharing, and needs fulfillment) in the websites, where there are escapism (i.e., high vividness and interactivity) and social elements. Drawing upon previous works, this study provided an additional explanation for the finding that social deficits such as loneliness have not always been consistent in predicting PSI (e.g., Cohen, 2004; Rubin et al., 1985). Thus, this study provides additional support for the previous belief that PSI on the Internet serves as a functional alternative to interpersonal communication (Papacharissi & Rubin, 2000; Rubin & Step, 2000). However, it is humans' interaction with a machine, not the machine itself (i.e., the internet), which makes this possible (Keng et al., 2011).

Whereas consumers may experience tourism-related services online through social interaction such as peer communication (Lee & Hyun, 2015; Tsiotsou, 2016), several researchers focused on the influence of TV on attitude toward, and a perceived image of, tourism destination, with their approach to integrating media and tourism management research (Fu et al., 2016; Su, Huang, Brodowsky, & Kim, 2011). According to Fu and colleagues' (2016) study, when watching reality TV programs featuring tourism destinations, the viewers' audience involvement in, and their reflection on, the program led to behavioral intentions through cognitive and affective image. Likewise, Su et al. (2011) confirmed the significant role of Taiwanese respondents' PSI with a TV character featured in Korean TV dramas in predicting attitude toward tourism destinations. Another important stream of tourism research relates to a variety of factors influencing online booking experience such as control and communication, website design quality, and website features (i.e., hedonic vs. utilitarian). These studies highlighted the importance of website interactivity for online consumers (e.g., Barreda, Bilgihan, Nusair, & Okumus, 2016). Regarding the process of interacting with travel websites, the current research investigated some aspects of older adults' emotional experience (i.e., fun) and social relationship (i.e., being friendly, part of a close-knit group, down-to-earth, etc.) with personalities of the websites (see 'PSI with travel websites' in Appendix A). Prior research found that consumers were influenced by several utilitarian and hedonic features of travel websites (e.g., Llach, Marimon, del Mar Alonso-Almeida, & Bernardo, 2013) due to the array of material

presented on the sites. Llach et al. (2013) recommended that the airline ticket purchasing process include hedonic aspects for consumers such as fun and enjoyment along with functionalities. The current study corroborates and extends the previously investigated nature of parasocial phenomenon as part of this process. Some research argued for the separation of parasocial phenomenon into experience of PSI (i.e., the moment of media exposure) and PSR entailing an enduring relationship (i.e., friendship and love) (Dibble, Hartmann, & Rosaen, 2016). In contrast, the present study drew upon previous studies that measured what Dibble et al. (2016) called 'Experience of PSI', and 'PSR' at the same time (Hoerner, 1999; Rubin et al., 1985). Accordingly, the current study extended the traditional media research context (i.e., interaction between a media viewer and a media figure) to the travel website - the interaction between a website user and personalities of the website. Importantly, the current study supported Sood and Rogers' (2000) finding that people who viewed the soap opera are likely to experience PSI through affective, cognitive and behavioral interaction, and referent and critical involvement. Likewise, Giles (2002) supported that the process of PSI is related to psychological and social domains, sometimes across the life course. This is also in line with Brown's (2015) perspective on the process of audience involvement with media personae consisting of transportation, PSI, identification and worship.

The findings in the current study showed that innovativeness has a significantly negative impact on PSI with travel websites (−0.151, p < 0.05). Previous studies found that as people get older, they pursue pleasure through innovativeness (i.e., hedonic innovativeness) to a lesser extent, which highlights older adults' reluctance to perform psychologically challenging tasks (Carstensen et al., 2003; Sikkel, 2013). Expanding on the previous finding, the present research result shows that less innovative elderly, who are not likely to get accustomed to adopting new travel products (Goldsmith, 2001), may find it interesting to interact with the personality of travel websites. Lee et al.'s (2007) study confirmed that online travelers with low innovativeness, compared with their highly innovative counterparts, are more likely to be affected by social influence such as the referents' buying choices. Importantly, previous research into older adults' online purchasing identified the influence of virtual agents on purchase intention and on trust mediated by social support in retailing websites (e.g., Chattaraman et al., 2012). However, this study provides a further understanding of older adults' computer-mediated communication, which is influenced by a level of innovativeness. The results associated with age identity and innovation support the notion of Moschis's (2012) life-course paradigm, which asserts that older adults experience certain turning points such as psychological, physical, and social aging over their life course. Hence, future tourism management research needs to apply this perspective by studying not only one-time situation but also the long-term process of changing attitude.

The results demonstrated that the geographic distance between older adults and their children influences the extent to which psychological and social age contributes to PSI. Prior research on intergenerational solidarity revealed the strong effect of proximity on parent-children association (Bengtson & Roberts, 1991). In a similar vein, the current study demonstrated that older adults' PSI may be enhanced when the so-called 'structural opportunity for intergenerational solidarity' (Bengtson & Roberts, 1991) encourages their dependence on the media; specifically, older parents, whose children are not able to visit them easily due to a long distance (i.e., out-of-state residence), may not be given sufficient support, thus perceiving the media utility (in this case, the website) to be of greater use to them (Ball-Rokeach, 1998). As the distance between children and parent, as defined by in-state vs. out-of-state, seems to

measure the perceived distance on a relative term in the current study, some previous research supported the effect of the perceived distance (e.g., Glaser & Tomassini, 2000; Gillespie & van der Lippe, 2015; Lee & Hyun, 2015). Notwithstanding a great deal of understanding of the uses and dependency model (e.g., Ball-Rokeach, 1998; Ballantine & Martin, 2005; Patwardhan & Yang, 2003; Sun et al., 2008), the factors influencing older adults' dependency on PSI have not been clearly understood. This study provides the insight that older adults are willing to use a functional alternative in the absence of readily accessible social support derived from their family. However, this influence was not significant among older adults with older physical age. Whether or not their children live in state or out of state may not be the actual motivation for interacting with media personae for physically older adults, because those in their late 70s (i.e., old 'older adults') are not equipped with the knowledge of how to access the Internet and social credentials (Pew Internet and American Life, 2014; Li & Liu, 2014).

The current study confirmed that PSI with travel websites is positively associated with well-being (0.825, p < 0.01), that well-being positively influences WOM (0.224, p < 0.01) and that PSI has a positive effect on WOM (0.605, p < 0.01). Thus, the direct and indirect effects of PSI with travel websites on well-being and WOM were confirmed in this study. This study confirmed the positive behavioral outcome caused by PSI with travel websites, and this finding is corroborated with previous media-based communication studies, which found the positive effect of PSI on purchase intention through genre exposure (Grant et al., 1991; Skumanich & Kintsfather, 1998). While previous studies attempted to identify the causal relationships among media dependency, genre dependency and PSI, the current study, extending the context from TV to travel websites, as suggested by Ballantine and Martin (2005), confirmed that the PSI of older people using travel websites plays an active role in inducing WOM directly and indirectly via perceived well-being.

Despite increasing research on well-being in tourism (Uysal et al., 2016), our understanding of the effect of travel and tourism services on QOL remains limited except for one study by Neal et al. (1999), who demonstrated that one aspect of travel service experience, namely satisfaction with pre-trip services, positively influences satisfaction with travel services, which in turn leads to positive travel experience to some extent. This finding is valuable given its utility for understanding older adults' needs for PSI via using commercial websites, in particular travel websites. In detail, the interactive nature of travel websites was found to play a role in enhancing their well-being by gratifying their psychological, psychosocial and other needs via PSI-Web, leading to what Veenhoven (1991) referred to as 'hedonic level of affect', as older people prefer emotional tasks. This experience is likely to counteract the negative symptoms the elderly might have experienced, for instance, loneliness and low satisfaction (Heo et al., 2015). This is also in line with the previous studies, which asserted that internet use played a positive role in reducing perceived negative situations, thus enhancing older adults' quality of life (e.g., Chen et al., 2000; Cotten et al., 2014; Heo et al., 2015; Novak et al., 2000; Shapira et al., 2007). This is contrary to Kraut and colleagues' (1998) negative notion of internet use, that is, its impact on reduced psychological well-being as other possibility. On the one hand, Kraut and Burke (2015) highlighted that as far as internet use is concerned, not all communication (i.e., communication with strangers) was conducive to psychological well-being, as the importance lies in realizing the nature of communication and relationship. On the other hand, Kraut and Burke (2015) suggested that technological advances are likely to influence people's well-being given the role of human agency influence. Specifically, the current study demonstrated that the latter is the case with PSI-Web, through which some older

people are likely to concentrate on the imaginary relationship, while navigating the web with their specific purposes relating to the journey.

Additionally, certain ethical implications need to be considered due to potential negative influences of PSI for the vulnerable, as discussed by several researchers. For instance, some older people who were greatly influenced by PSI may lose self-control over their shopping and indulge in impulsive purchasing (Dittmar, Long, & Bond, 2007; Lim & Kim, 2011). Therefore, education for older consumers should be considered to raise awareness of the negative influences of impulsive and compulsory buying behavior arising from PSI with the media (Park & Lennon, 2004).

5.2. Theoretical implications

This research contributes to the tourism management literature by investigating older adults' PSI with travel websites, which needs to be further explored in order to address the gap in PSI research in tourism. Furthering the current knowledge concerning internet usage and its consequences, this study further illuminates the antecedents and consequences of what Hoerner (1999) referred to as PSI-Web in the context of online travel sites. Importantly, although previous research highlighted older adults in TV-induced tourism (e.g., Kim, Agrusa, Lee, & Chon, 2007), the current study confirmed that when targeting older adults, careful attention should be paid to an understanding of their heterogeneity in their behavior and characteristics in terms of perceived age identity and the level of innovativeness, which is a void in the tourism management literature. Some prior research on media-induced tourism found a positive influence of PSI among Taiwanese who viewed Korean dramas (Su et al., 2011), and the effect of audience involvement on destination image among those who viewed reality TV programs (Fu et al., 2016).

However, our understanding of imaginary interaction with travel websites remains weak, especially in the tourism literature. Whilst previous PSI studies found the role of older adults' interaction while watching TV programs and/or TV home shopping, the current study replicated the influence of the online travel community (Lee & Hyun, 2015) while extending it to the context of older adults' PSI-Web. By focusing on PSI with travel websites, the current study extended prior tourism management research by demonstrating the importance of interacting with the personality of the website during the online shopping, which may need further study. Thus, the current study established the understanding of older adults' PSI when using travel websites. The main contributions are as follows.

First, although there have been a number of psychological studies investigating PSI, there has been a paucity of research investigating the effects of psychological capabilities as an antecedent of PSI in the tourism management literature, despite some studies conducted from the viewpoint of social psychology (i.e., social interaction between peers, Lee & Hyun, 2015). The present study highlighted that whilst older adults with older psychological age are likely to visit online travel websites for a functional alternative, they are more likely to focus on the interaction with website personalities, which is an illusionary relationship. This strengthened the argument for the cognitive dimension of PSI through imaginary interaction (Giles, 2002; Sood & Rogers, 2000).

Second, previous research suggested that older adults paid strong attention to their biological age compared to other dimensions (Teuscher, 2009). The results corroborated the antecedent of PSI in relation to physiological conditions (e.g., see Kundrat & Nussbaum, 2003; Lim & Kim, 2011; McMellon & Schiffman, 2000; Rubin & Rubin, 1982) by demonstrating the influence of a broader and detailed understanding of perceived

physical conditions, that is, physical age. The current study expands our understanding of the potential reasons for older adults' internet dependency and/or internet usage (e.g., Ballantine & Martin, 2005; Patwardhan & Yang, 2003), as older adults may be dependent on PSI when they seem to be physically older.

Third, the results support the extant literature highlighting that PSI is similar to a social interaction, for instance, a face-to-face relationship (e.g., Giles, 2002; Perse & Rubin, 1989; Rubin & McHugh, 1987; Turner, 1993), given that the same cognitive processes are used in both situations (e.g., liking/attraction, affinity, etc.). This is in line with the recent finding that a human-machine interaction exerts a positive effect on people's use of technology (Kraut & Burke, 2015). Turner (1993) reviewed past research and highlighted the fact that TV viewers tend to perceive media personalities/figures (e.g., a newscaster or television personality) as being one of their acquaintances, leading to the development of a relationship with them over time. Although several researchers recognized the significance of PSI in the context of various kinds of media (Fu et al., 2016; Ngai et al., 2015; Su et al., 2011; Tsiotsou, 2016), the present study is a pioneering study in its finding of a significant relationship between perceived social age of the elderly and their PSI with the personalities of travel websites.

Fourth, older adults who are not innovative need social presence to guide their decision on trying travel products or services (Lee et al., 2007; Mathur et al., 1998); for instance, prior tourism management research found that older adults with low innovativeness are subject to social influence from others during online travel shopping (Lee et al., 2007). However, the current study suggested that this may happen via interactive communication such as PSI-Web, which may not always result in purchase intentions. In line with the theories of social presence (e.g., Biocca, Harms, & Burgoon, 2003; Kumar & Benbasat, 2002), the present results indicate that what Biocca et al. (2003, p. 475) called 'illusory social interactions' are applicable especially to older adults who are not innovative, whereas innovative consumers may be actively involved in the consumption of specific travel-related products (Szmigin & Carrigan, 2001). Hence, this research has established an understanding of the effect of individual characteristics (i.e., innovativeness) of older adults on online travel shopping behavior.

In addition, there has been a void in understanding the effect of PSI in an e-tourism context although prior research investigated the effect of TV viewers' audience involvement and their PSR with a TV character on behavior intentions. By responding to the gap in tourism research on PSI with travel websites, the current study has provided insights into how older adults are influenced by PSI while visiting travel websites and purchasing travel-related products online. This study expanded on previous studies of the relationship between internet usage and well-being (e.g., Cotten et al., 2014; Heo et al., 2015; Shapira et al., 2007), given that older adults not only use the internet, but are also exposed to illusionary interactions with online travel sites, especially when they perceive their psychological and physical age to be older and their social age to be younger. Although previous investigations have given much attention to the use of social networking sites in relation to its potential effects on well-being (Kraut & Burke, 2015; Kraut et al., 1998), understanding of the effect of PSI on well-being in commercial websites is scant. This finding corroborates prior tourism well-being research which found a positive effect of travel service experience, including pre-trip service experience, on tourists' QOL (i.e., travelers' satisfaction with overall life) that was mediated by a series of factors (Neal et al., 1999). Building upon prior flow research (e.g., Chen et al., 2000; Novak et al., 2000), the current study's understanding of the effect of PSI-Web on well-being is a significant addition to our understanding of what may drive 'a compelling online experience'. Whilst it is likely that Novak et al.

(2000)'s flow experience is associated with PSI (Lombard & Ditton, 1997), the result suggests that PSI-Web provides the opportunity to experiencing the compelling travel website.

Finally, the results replicated the existing knowledge that satisfaction, arising from PSI, leads to perceived benefits (Derrick et al., 2008), which in turn may result in WOM intentions caused by perceived usefulness (e.g., a quality or value) and satisfaction (Babin, Lee, Kim, & Griffin, 2005; Hartline & Jones, 1996; Wangenheim & Bayón, 2007). One prior study found that PSR through social media services exerts a direct effect, along with indirect via social relationship, on one aspect of service brand relationships, namely brand trust (Tsiotsou, 2016). However, scant research, especially in the tourism literature, has introduced PSI to examine the direct and indirect influences of PSI on WOM. Bridging this research gap, this study confirmed the positive effects of PSI as highlighted by some previous research on satisfaction and other post-behavior (e.g., Ballantine & Martin, 2005; Lim & Kim, 2011; Skumanich & Kintsfather, 1998; Tsiotsou, 2016) in the context of online travel shopping websites.

5.3. Managerial implications

The present results provide managerial implications for designing travel websites in several ways. The finding that age identity has significant effects on PSI with travel websites provides valuable insights into some marketing strategies. First, older adults may be involved in interactive travel websites due to some situational factors, such as their perceived psychological limitations and physical immobility, which influences their dependency on travel websites, causing them to interact with media persona rather than communicating with travel agents face to face. Hence, individual situations should be considered, because of their influence on people's self-perception in terms of their age and resulting behavior (e.g., PSI, well-being and WOM). Of special interest is the characteristics of older adults, such as their innovativeness, which may be used to devise an appropriate marketing approach, including the message being communicated to older adults to further develop the brand relationship with them through PSI-Web. Importantly, travel website marketers should be able to enhance older adults' perceived control (e.g., pleasure and trust), in order for them to interact with website personae with ease, building upon flow theory (Manganari, Siomkos, & Vrechopoulos, 2014). Likewise, travel websites should be conceived in such a way that their parasocial signals, as described by Hoerner (1999), such as the tone of the text presented on them or the persona's characteristics, attract the interest of older adults while they are browsing them, thereby optimizing the flow experience as a result of PSI.

As another implication, online travel agencies may benefit by recognizing the relationship between PSI, well-being and WOM; in fact, travel websites may adopt an array of online communication tools in order to spread positive WOM, such as through many-to-many, one-to-many and one-to-one marketing channels (see Litvin, Goldsmith, & Pan, 2008). For older adults who live far away from their children, travel websites should include social agents (e.g., Chattaraman et al., 2012) to maximize the level of positive PSI, thereby producing higher levels of consumer involvement and surprise, as argued by Litvin et al. (2008). Finally, negative experiences caused by PSI (e.g., dissatisfaction and alienation, Horton & Wohl, 1956) should also be prevented given the relatively greater influence of non-satisfied consumers as compared to satisfied ones (Kim & Cho, 2014) and, more importantly, an appropriate level of customer satisfaction is needed to produce WOM, whereas low customer satisfaction will likely not lead to WOM (Söderlund, 1998).

6. Limitations and directions for future research

Despite invaluable understanding of PSI with websites among older consumers, caution should be made before applying the results. Given that this study was designed using a cross-sectional approach, as its main purpose was to understand elderly people's perception of PSI, it is strongly recommended that future studies adopt qualitative research methods, particularly those employing a longitudinal approach, in order to understand older adults' experiences and their associated meaning, as suggested by Giles (2002). Accordingly, it would be interesting to understand older adults' motivations for PSI in online communities in diverse situations (e.g., high cognitive capabilities, physical immobility, loneliness, etc.).

Another limitation is that by using a sample of U.S. participants who were recruited by an online survey company, this study did not consider some of the macro level factors addressed by Ball-Rokeach (1998). Thus, building upon the work of Ball-Rokeach (1998), further research is needed in order to understand to what extent older adults' PSI with website personalities is influenced by micro factors (i.e., individual internet dependency) and macro factors (i.e., organizational and/or system effects). Further research into the consequences of PSI could be conducted in divergent contexts in the continuum of social-parasocial interactions (Giles, 2002). For instance, future researchers might be interested in identifying the typology of PSI, for instance, in terms of the types of encounter, location constraints and/or potential relationships. Whereas much attention has been paid to the development of a relationship and its resultant behaviors in traditional media (i.e., newspaper, soap opera, TV, etc.) in the extant PSI literature, future research should also address these issues in online communities to a greater extent (Ballantine & Martin, 2005).

Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.tourman.2017.07.012.

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