

ONLINE HEDONIC CONSUMERS' PRIVACY CONCERNS: A SYSTEMATIC LITERATURE REVIEW

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Abstract

The purpose of this paper is to provide a comprehensive review of extant literature on online hedonic consumer's various privacy related issues and in particular- the privacy concern. Further, the authors attempt to identify a gap that can be addressed in future through developing a comprehensive and integrated model on online hedonic consumer behaviour that focuses on their privacy concerns. The authors conducted a systematic literature review of the extant literature on online hedonic consumers, their various privacy related issues and in particular- the privacy concern. This paper, through its thorough literature review, made a clear distinction among privacy related issues that the online consumers face, namely privacy awareness. The discussion on "privacy concern" elucidated any confusions held by the researchers and readers. This review offered an insight into the current status of research in this field and recognized the factor "privacy concern" as a gap in the existing model on online hedonic consumer behaviour that could be properly explored in further scholarly empirical research. Exclusion of non-English language articles and lack of inclusion of different kinds of hedonic products or services other than SNSs were the limitation of this paper. Managers and e-commerce vendors could utilize the findings of this review to address their hedonic consumer's privacy concern for the growth of their online businesses. This paper lays the groundwork to explore hedonic consumer's privacy concern in detail. A new integrated model on online hedonic consumer behaviour is proposed, which provides a theoretical framework for researchers to further examine the mediation effect of privacy concern.

Keywords: Hedonic-Motivation System (HMS), Hedonic-Motivation System Adoption Model (HMSAM), hedonic consumers, hedonic consumption, privacy concerns, literature review

Introduction

Hedonic products and services, their consumers and the associated consumer behaviours occupy interesting positions in academia. The growth in the hedonic products and services consumption as well as their relevant business have been reported by scholars (Brown & Venkatesh, 2005; C.-L. Hsu & Lu, 2007) and predicted by the mainstream media (Entertainment Software Association, 2007; Newzoo B.V., 2017, April 20). The Covid-19 pandemic and large number of people staying indoors worldwide as a consequence resulted in a surge in the consumption of hedonic products and services. Yet, this avenue is largely

unexplored through scholarly research. The progress of “mobile computing”, “social networking”, “computer gaming”, etc. i.e., kinds of hedonic products and services signals that an economic and social revolution in technology usage is inevitable. As evident by various business indicators i.e., increased sales figures (Entertainment Software Association, 2019), and mainstream interest (MarketWatch, 2020) in the category of hedonic products and services, this phenomenon is too big to ignore and academicians must have a closer look into this without delay. Therefore, “Hedonic-Motivation Systems” or “HMSs”, their usage, adoption as well a key factor influencing its users- are the focal point of this study.

Several researchers (Janda, Trocchia, & Gwinner, 2002; Novak, Hoffman, & Yung, 2000; Wolfenbarger & Gilly, 2003) include “security” and “privacy”, among the key aspects of a retail experience. “Security” and “privacy” related problems during online shopping might result in consumer’s negative evaluation, comments and subsequent distrust in respective online stores and their offerings (Miyazaki & Fernandez, 2001). Researchers (Chen, Beaudoin, & Hong, 2017) suggest that “privacy” is an integral part in consumers’ decision-making process. Scholars (Suki & Suki, 2007) mention that from the customers’ perspective, “privacy concerns” in online shopping surpass those in physical stores. “Privacy concern” is also associated with “perceived risk” (Glover & Benbasat, 2010), “attitude toward online buying” (Teo & Liu, 2007) and “online purchase behaviour” (H. Li, Sarathy, & Xu, 2011; Liao, Liu, & Chen, 2011). Online privacy issues includes “spam emails”, “usage tracking”, “sensitive personal data collection”, “sharing of information with third parties” etc., as described by Wang, Lee, and Wang (1998). “Privacy concerns” differ because of personal variances i.e., “educational background”, “culture”, “demographic background” etc. (C.-w. Hsu, 2006; Peslak, 2006).

This study aims to review extant literature on hedonic consumer’s privacy concern in the specific context of online purchase, to identify existing research gaps, and to propose probable directions for future research. More specifically, this study addresses these research questions by carrying out a systematic literature review: (1) which research contexts i.e., types of markets, types of consumers and others have been studied? (2) what were the findings in previous studies? and (3) do the issue of privacy concern has any impact on hedonic consumers consumption behaviour? Due to its uniqueness, a specific look and focus will be given at hedonic products and services, leading to establish a new model of consumer behaviour that might address any potential research gap that might be discovered in this literature review. A model, that might help us explain how and why, the socially networked hedonic consumers behave in the way they behave during their online purchases – if they are concerned about their privacy. Initially starting in Asia and later followed by extensive research conducted in other parts of the world, this research might even expand the generalisation of this proposed model and establish it further. This idea could hopefully open up new avenues for further research i.e., looking into the impact of privacy concerns on many other areas of consumer behaviour, plus inclusion of any new variable(s) should the need arises.

Methodology

For the purpose of providing an overview of the existing research on “privacy concern” in the context of online hedonic consumers, we carried out a systematic literature review. It is expected to provide “research synthesis of existing studies on an issue, identifying opportunities for future research” (Bhimani, Mention, & Barlatier, 2019). It is aimed to be “rigorous” and “transparent” (Mallett, Hagen-Zanker, Slater, & Duvendack, 2012). Systematic reviews exercise clear and pre-specified methodologies to “select, scan, and

analyse all the available evidence” for reducing bias and allowing subsequent replications (Gopalakrishnan & Ganeshkumar, 2013).

Eligibility criteria

To recognize present and pertinent literature on the “privacy concern” of hedonic consumers, certain selection criteria were agreed on. The peer-reviewed academic journal articles that were included in this review were (a) published in English; (b) based on online context; (c) focused on the “privacy concern” of hedonic consumers. Logically, the excluded articles were: (a) non-academic by nature; (b) written in languages other than English, (c) based on offline context only; (d) focused on aspects other than “privacy concern” of hedonic consumers.

Literature search and selection

A significant number of academic journal articles were collected after appropriate keyword searches in diverse databases. These were then screened based on the aforementioned selection and exclusion criteria. Since the emphasis of this review is the privacy concerns of hedonic consumers in online context, a multidisciplinary topic, the key multidisciplinary and widely used databases were utilized for literature search. These databases were selected as they have a rather high volume of scholarly articles related with information systems, marketing, social networks, hedonic consumers and privacy concerns and the fact that articles found in these databases come from high impact, highly ranked peer reviewed journals. Additionally, several leading academic journals (e.g., “Journal of Marketing”, “Computers in Human Behaviour”, “MIS Quarterly” etc.) where quantitative, relevant studies are often featured were researched. Published articles from 1960 to 2020 were systematically reviewed to find out if they included our topics and its antecedents and consequences as measured variables. Conference proceedings, dissertation databases i.e., ProQuest dissertations & theses full text, review papers and references from the retrieved papers were also researched. The emphasis were put mostly on scholarly journal articles as Rosenthal (1995) quite clearly notes “since journals are more likely to publish statistically significant results than nonsignificant results, articles therein are more likely to report the results of studies with effect sizes larger than studies that are not published”.

The keywords were selected based on the concepts, ideas and theories related to privacy concerns and hedonic consumers. To identify possible pertinent research related to privacy concerns and hedonic consumers, the terms “privacy concerns”, “social networking sites”, “online shopping”, “hedonic-motivation system”, “hedonic consumers”, were applied as keywords. Simultaneously, their synonyms (e.g., “SNS”, “Internet”, “HMS”) were also made use of as keywords. To include the maximum number of scholarly papers in this study, the full text (i.e., all fields except for the reference section) of the journal articles were combed. The search concluded on 31 December 2020, yielding a total of 620 journal articles. After taking away a few copies, 561 articles remained. The scrutinization of titles, abstracts, and keywords excluded 250 irrelevant journal articles. Most of the excluded papers focused neither on the privacy concern nor on the hedonic consumers. Afterwards, the authors of this review evaluated the full text of the outstanding 311 journal articles independently to recognize pertinent papers on the basis of the research questions and the eligibility criteria. Differences of opinions that were raised were resolved through discussions. Among these 311 journal articles, 44 journal articles along with few additional book chapters (5) and conference papers (3) were utilized for this systematic literature review. Lastly, 84 journal articles along with few additional book chapters (9), conference papers (5) and recent web resources (5) were reviewed for the rest of this study. The outstanding 183 journal articles were not included for numerous reasons.

The authors found that many research that were carried out in the context of online shopping were, in fact, referring to the utilitarian consumers rather than hedonic consumers. There were few papers focusing on the privacy concern of utilitarian consumers, rather than the privacy concern of hedonic consumers. Finally, some other studies focused on the privacy concern of hedonic consumers, but they were not conducted in an online context.

Results

This review analysed the selected articles from three perspectives: (1) the research theme; (2) the research context & (3) key findings related to the “privacy concern” of online hedonic consumers.

Literature Review

Hedonic consumers

“Hedonic” products and services are described as “fun, exciting, delightful, thrilling, enjoyable, sensational and experiential” and “utilitarian” as “effective, helpful, necessary, practical, instrumental, and functional” (Lu, Liu, & Fang, 2016; Voss, Spangenberg, & Grohmann, 2003). Earlier investigations (Hirschman & Holbrook, 1982; Strahilevitz & Myers, 1998) simply put it as “hedonic products provide more experiential consumption that results in fun, pleasure, and excitement i.e., designer clothes, sports cars, luxury watches, etc., whereas utilitarian products are focused primarily being instrumental and functional i.e., microwaves, minivans, personal computers, etc.”. Hedonistic consumption of items are termed as “the multi-sensory, fantasy and emotional aspects of consumers’ interactions with products” (Bamosy & Solomon, 2016). The use of hedonic items is significantly connected to luxuries (Kivetz & Simonson, 2002a, 2002b). Researchers (Dhar & Wertenbroch, 2000; Voss et al., 2003) argue that certain products and services have both utilitarian and hedonic characteristics.

Hedonic-Motivation System (HMS)

Consumer’s use of any information technology as an information system can be categorized as “Utilitarian-Motivation System” (UMS), “Hedonic-Motivation System” (HMS) or “Mixed-Motivation System” (MMS) based on their motivations to use the information system. Interestingly, arguments exist on all frontiers. Scholars (Jegers, 2007; Sherry, 2004) note common examples of HMS i.e. “video games”, “social networking sites”, “virtual worlds” etc., and observe that they “can create a level of deep immersion and devotion which is seldom seen with UMS”. Furthermore, users dedicate time to use HMS for “intrinsic rewards”. The users of HMS commonly have the slightest concern for the acquisition of any “potential external reward(s)” that they might obtain (Sweetser & Wyeth, 2005); instead, the users are typically perturbed about the “process or experience of use” itself. The research carried by Lowry, Cao, and Everard (2011) explained the motivation for putting attention to and accepting systems with respect to “intrinsic motivation” and “extrinsic motivation”. Researchers (Csikszentmihalyi, 1991; Thomas & Velthouse, 1990) have outlined how “intrinsic motivations” can influence behaviour of humans more strongly than “extrinsic motivations”. Furthermore, “joy” (i.e. “perceived enjoyment”), a type of “intrinsic motivation”, was included in the “Technology Acceptance Model (TAM)” by Venkatesh (2000), and “intrinsic motivation” since then has sustained to collect attention in IS acceptance research in various contemporary scholarly works (Qiu & Benbasat, 2009; Saadé, Nebebe, & Mak, 2009).

To utilize these prospects, scholars (Lowry, Gaskin, Twyman, Hammer, & Roberts, 2012) built and tested a brand new acceptance model titled “Hedonic-Motivation System Adoption Model (HMSAM)”. Rather than an inconsequential, all-purpose extension of TAM, HMSAM

is an “HMS-specific system acceptance model” that is very much focused. The theory the scholars (Lowry et al., 2012) developed and tested focused precisely on the “underlying motivations driving HMS acceptance in a process-oriented context”. Here, “intrinsic motivation” is further protuberant compared to the outcome-oriented “extrinsic motivation” that is commonly accentuated in any traditional TAM studies. Van der Heijden (2004) proposed an acceptance model of “Hedonic Information Systems” in an effort to emphasize on HMS use by employing the construct “joy” as the surrogate for “intrinsic motivation” instead of taking advantage of the more comprehensive CA construct. This new model “HMSAM”- builds on Van der Heijden’s (2004) proposed acceptance model, accompanied by two key extensions intended to catch the significant part of “intrinsic motivation” in use of HMS. This works side by side with the literature on consumer behaviour that differentiates between “utilitarian products” and “hedonic products” (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982).

Social networking sites or SNSs, a prime example of HMS

SNS is defined as “a cyber-environment, a virtual community which permits any person to construct his/her own profile, share text, images, photos, and to link other members of the same site with the help of the applications and groups provided on the internet” (Boyd & Ellison, 2007; N. Ellison, Steinfield, & Lampe, 2006). Some SNSs allow their users to make their own groups and also limit other users admission to few specific content (Marwick & Boyd, 2014). Even though the concept of online social network dates back to the 1960s, it’s swift development and popularity grew after the emergence of the internet. There are more than two hundred (List, 2019) SNSs with a variety of software applications, serving an extensive assortment of interests. A majority of these SNSs support the preservation of pre-existing social connections. Various scholars (Boyd & Ellison, 2007; Naone, 2008; Urstadt, 2008) discussed the history of SNSs in a detailed manner. The role of “influential users” in SNSs and their role in marketing has also been noted (Mahmoudi, Yaakub, & Bakar, 2018).

“Information disclosure” on SNSs-as a part of managing the user’s identity (Strater & Lipford, 2008), generated much attention because of the “privacy concerns” (Buchanan, Paine, Joinson, & Reips, 2007; Yaakop, Anuar, & Omar, 2013). Although, scholars (Hann, Hui, Lee, & Png, 2007; Luo, 2002) speculated that the use of the SNSs, combined with the benefits from networking socially online outweigh any potential privacy concerns of the users. Scholars (Reynolds, Venkatanathan, Gonçalves, & Kostakos, 2011) fixated on SNSs and the affiliation between “privacy concerns” and “information disclosure”, finding little to no connection. However, Tufekci (2008) reported that students would rather regulate the “visibility of information” than the “levels of disclosure” to address their privacy concerns. But like all modern information technologies that are existing, SNSs are also not without its own unique set of problems. Users become far more concerned about their privacy due to the privacy related problems raised by SNSs (Blank, Bolsover, & Dubois, 2014). Several academic studies on privacy (Tsai, Egelman, Cranor, & Acquisti, 2011) revealed that many problems of the SNSs and online businesses arise from the threats to consumers’ information privacy. There have been reports of waning in Facebook members in developed nations (Garside, 2013). Stieger, Burger, Bohn, and Voracek (2013) identified people’s privacy concerns as primary reason. Several scholars (Andrejevic, 2007; Rosen, 2010) highlight the potential problems caused by SNSs due to their use by private companies to scrutinize any future job applicant’s past online behaviours online when they were young, jeopardizing future career opportunities.

Online privacy concerns

N. Mohamed and Ahmad (2012) define “online privacy concerns” as “the extent to which a consumer is worried over the organizational practices that are related to the collection and use of their personal information”. This tendency to worry is generally found to be one type of relatively stable personal traits (Buchanan et al., 2007; Malhotra, Kim, & Agarwal, 2004). Dinev and Hart (2006) define “privacy concerns” as anxieties regarding “possible loss of privacy as a result of a voluntary or surreptitious information disclosure to a web site”. “Online privacy concern” can also be defined as “the process through which users modify their online privacy behaviour to keep their sensitive personal information protected from unwanted audiences” (Strater & Lipford, 2008).

Table 1 provides a detailed overview of “online consumer’s concerns and anxieties”, “correlation between privacy concern and protective strategies”, “privacy-protection behaviours”, and “dimensions of factors affecting overall privacy concerns” with a variety of specific focus points. Chellappa and Sin (2005) emphasized how especially important concerns for information privacy are in the online context (Pavlou & Fygenon, 2006). There have been several instances of problematic data usage that have been associated with elevated privacy concerns (Malheiros, Preibusch, & Sasse, 2013; Scism, 2013). Researchers showed that “trust” (Gefen, Karahanna, & Straub, 2003a, 2003b) and “privacy concerns” (Eastlick, Lotz, & Warrington, 2006; Malhotra et al., 2004) are the two key apparatuses for the decision to divulge personal information on the internet.

Factors influencing privacy concerns

Numerous studies report that “internet skills”, “experiences” and “usage” influence “privacy concerns” in variety of ways:

- On one side, a few researchers state that “users’ level of online privacy concern” is unaffected by the “level of their internet experience” (A. A.-A. Mohamed, 2011).
- Alternatively, academics have also revealed that a “positive” & “direct” relationship exists between “users’ internet experience” and their “online privacy concern”, as the users are “more aware of how data about them could be collected and used against their wishes” (Beldad, de Jong, & Steehouder, 2011).
- Additionally, several studies have reported that “users’ online privacy concerns” actually lessens as the “level of their internet usage and experience” surges (Bellman, Johnson, Kobrin, & Lohse, 2004; Cho, Rivera-Sánchez, & Lim, 2009).
- But studies could not conclude whether “victims of scams are more concerned about privacy or not” (Jensen, Potts, & Jensen, 2005).

Previous studies reported that demographics could help in understanding the “risk perception” and “privacy concerns” in digital media use (Blank et al., 2014; Marwick & Boyd, 2014):

- “Gender” significantly influences usage of “privacy settings”, as men are more inclined to take risks while posting personal and private information online (Fogel & Nehmad, 2009).
- Additionally, women are “more concerned about privacy than men” (O’Neil, 2001).
- But few scholars (Yao, Rice, & Wallis, 2007) argue that this influence of “gender” on “privacy settings” is rather inconclusive.
- Similarly, few researchers (Hoofnagle, King, Li, & Turow, 2010) want to claim “little or no significant differences” by “age”.

- Yet, older users exhibited more “protective usage” (Madden et al., 2013) and younger users were better at managing “privacy settings” (Grant, 2005).

Table 2 provides a comprehensive review of “factors influencing privacy concerns” from specific viewpoints of SNS users, online users, online shoppers, online marketing & online merchants.

Discussion

Despite existing research investigating the issues of “privacy concerns” from diverse perspectives, some gaps in previous studies yet remain. First, further evidence is required to offer a better understanding on these issues from the perspective of hedonic consumers as it is traditionally overlooked, until now. In earlier sections of this paper, the different kinds of products or services, namely utilitarian and hedonic were discussed; and the fact that their respective consumers will behave differently than their counterparts has been quite evident in the preceding literature review section. Therefore, for future empirical research, a suggestion would be to explore the issue of “privacy concerns” from the perspective of hedonic consumers and extend the existing research into this unexplored area in the academia.

Second, there is a strong need for an updated behaviour model regarding the hedonic consumers. The literature review so far revealed paucity of research in several key areas of hedonic consumer behaviour concerning few crucial privacy issues (e.g., “privacy concerns”). While looking closely into an existing HMSAM, especially in observing SNSs effects on the consumers purchase decision making- it was revealed that there are scopes for adding new dimensions. The issue of privacy is of utmost concern to the SNS users, more so to them compared to other systems i.e., “online shopping”, “online dating”, “online gaming”, “virtual worlds”, “digital music repositories”, “learning/education” and “gamified systems”; so, it is quite reasonable to assume that the user’s concerns regarding privacy issues will not be similar in case of SNSs usage as compared to all these systems. As SNSs are used for multitude of purposes, the generalized assumption of privacy and its impact in this regard would not be the best course of action. For all we know, the impact of privacy in terms of some SNSs usage could be quite the reverse compared to its impact in some other above-described systems. Interestingly enough, some of those effects might be similar to some other HMS systems i.e., “pornography”, “online gaming”, “online gambling” etc., where the users require their anonymity to be preserved. Thus, the decision to address this issue by including these HMSs by adding mediator variables i.e., “privacy concerns”, seems logical. An updated and comprehensive model can provide profound insights into the hedonic consumer behaviour in an organized manner and offer improved direction for pertinent research.

Third, additional longitudinal studies are required in the ongoing research on hedonic consumer behaviour in the contexts of “privacy concerns”. Also, almost the entire domain of research, process models of privacy-related online behaviour of HMS consumers remains largely unexplored. Only a few studies (Bélanger & Crossler, 2011; Y. Li, 2011; Smith, Dinev, & Xu, 2011) exist that explore this idea despite not providing a specific theoretical framework to online privacy in the context of HMS.

Fourth, to ensure validity, any proposed future empirical studies should include diversified, representative samples – containing participants from different contexts (i.e., age groups, occupations, working environments, income group, countries etc.). Most of the reviewed articles that contained empirical results, utilized student samples. Numerous opinions in favour and against convenience samples containing students exist. Quite a few authors (Beltramini, 1983; Oakes, 1972) specified the perils of having student samples in academic studies. Scholars frequently cited warnings to external validity as their key apprehension,

disagreeing that students are “atypical of the general population”; consequently, any results founded on student samples might not be “generalizable to other populations” (Cunningham, Anderson, & Murphy, 1974). Yet, scholars addressed this by stating “students are often forerunners in the adoption of new communication technologies” (Lewis, Kaufman, & Christakis, 2008).

And finally, Lowry et al. (2012) noted that group and community oriented HMSs, i.e., “multiplayer games”, “social networks”, “online gambling”, “blogging” etc., were not focused. This can be addressed by expanding the breadth of the research by testing the newly proposed model on consumers of different HMSs such as “online dating”, “online gaming”, “virtual worlds”, “digital music repositories”, “learning/education” and “gamified systems” etc., thereby increasing the validity of the newly proposed model.

Conclusion & scope of future studies

This review contributes to the research on hedonic consumer behaviour in a few ways. First, this review offers an overview of the existing research, offering the scholars and readers an update on the current status of research related to hedonic consumer behaviour. Additionally, the discussions on “privacy concerns” help to remove any confusions held by the researchers and readers. Moreover, while carrying out the systematic review of pertinent existing literature, quite a few knowledge gaps were identified. Subsequently, clear directions as well as suggestions for future research were provided. The ensuing objective of this study is to develop a predictive model for gaining insights into online hedonic consumer’s privacy concerns and to test it empirically. Therefore, this study is proposing a modified version of HMSAM by adding a new dimension- “privacy concerns”, especially when the consumers are using SNSs in their purchase decision making. This study proposes to skip the intricate process of full creation and validation of an instrument, only partial – by possibly involving few established scales during formation of the construct, but still employing numerous succeeding pilot tests, ensuing evaluation for nomological validity, etc. as suggested by scholars (D. B. Straub & Boudreau; D. W. Straub, 1989). For measuring “privacy concerns”, future studies might employ “concern for information privacy scale” (Smith, Milberg, & Burke, 1996) or “Internet Privacy Concern Scale” (Hong & Thong, 2013) or “Internet Users' Information Privacy Concerns (IUIPC)” scale (Malhotra et al., 2004) etc., thereby including “privacy concerns” as a possible mediator in the proposed privacy related behaviour process model.

No research endeavour is free from limitations, and this review was no exception. Articles written in non-English language were not included in this review. Many different kinds of hedonic products or services exist i.e., “video games”, “online gambling” etc. But for scale and scope’s sake, one of the most prominent i.e., SNSs were chosen as a focus of this paper. As SNS’s issues i.e., “SNS fatigue” (Zhu & Bao, 2018; Zong, Yang, & Bao, 2019) etc. are being noticed, other hedonic products or services in future subsequent studies should be included to explore avenues of HMS further.

Disclosure statement

The authors of this review paper report no potential conflict of interests.

Table 1. Summary of the reviewed articles

Research context	Specific focus	Authors	Research methodology	Data collection method	Sample
Online consumer's concerns and anxieties	Online & offline consumers	Culnan and Armstrong (1999)	Quantitative	Telephone survey	1000 U.S. adults
	Online consumers	Novak et al. (2000)	Quantitative	Web-based consumer survey	1654 respondents
		Miyazaki and Fernandez (2001)	Quantitative	Pencil and paper survey	160 respondents
Correlation between privacy concern and protective strategies	Internet users	Lutz and Strathoff (2014)	Quantitative	Telephone interviews	1002 Swiss adults
	Online consumers	Larose and Rifon (2007)	Quantitative	Experiments	227 undergraduates from a midwestern university.
	Facebook users	N. B. Ellison, Vitak, Steinfield, Gray, and Lampe (2011)	Quantitative	Survey	299 undergraduates at Michigan State University
	The relationship between "individuals' privacy perceptions" and "institutional privacy assurances"	Xu, Dinev, Smith, and Hart (2011)	Quantitative	Survey	823 users
Privacy-protection behaviours	Uninstalling mobile applications	Boyles, Smith, and Madden (2012)	Quantitative	Telephone surveys	2,254 adults
	Embracing or resisting the acceptance of latest technologies that defend or contest privacy	Miltgen, Popović, and Oliveira (2013)	Quantitative	Online survey	326 young (15–25 years old) respondents
	Submit false data	Sheehan and Hoy (1999)	Quantitative	E-mail survey	889 respondents
		Dommeyer and Gross (2003)	Quantitative	E-mail survey	137 respondents
		Lwin, Wirtz, and Williams (2007)	Quantitative	Controlled experiments	180 adults
	Refusal to buy/enrol at a website	Milne, Rohm, and Bahl (2004)	Quantitative	Survey	340 respondents
	Data removal request	Dolnicar and Jordaan (2006)	Quantitative	Online survey	1055 respondents
	Pursue supplementary information (i.e., "privacy statement")	Youn (2009)	Quantitative	Survey	144 middle school students
Remove their information from	Phelps, Nowak, and Ferrell	Quantitative	Mail survey	556 respondents	

	databases	(2000)			
	Unwilling to disclose personal data to websites	Nam, Song, Park, and Ik (2006)	Quantitative	Online survey	323 respondents
		Wirtz, Lwin, and Williams (2007)	Quantitative	Online survey	182 respondents
Unwilling to make transactions	Dinev and Hart (2006)	Quantitative	Survey	369 respondents	
Dimensions of factors affecting overall privacy concerns	Private understandings of “internet use” and “areas of the internet”	Lee (2009)	Quantitative	Online survey	368 online banking users
		Bryce and Fraser (2014)	Qualitative	Focus group discussion	108 young respondents
	Socio-demographic factors	Marwick and Boyd (2014)	Qualitative	Semi-structured interviews	166 teenagers
		Taddicken (2014)	Quantitative	Online survey	2739 German internet users
	“Trust in institutions” and “trust in other people”	Jarvenpaa, Tractinsky, and Saarinen (1999)	Quantitative	Survey	382 respondents
		Metzger (2004)	Quantitative	Survey	189 participants
		Chellappa and Sin (2005)	Quantitative	Survey	243 online consumers
		Okazaki, Li, and Hirose (2009)	Quantitative	Survey	510 mobile phone users in Japan
	Knowledge about “privacy settings”	Baek, Kim, and Bae (2014)	Quantitative	Survey	2028 South Korean online users
	“Internet consumption practices” and “objective for internet use”	Yao et al. (2007)	Quantitative	Survey	413 undergraduates from a southwestern U.S. university

Table 2. Factors influencing privacy concerns

Research context	Specific focus	Authors	Research methodology	Data collection method	Sample
SNS users	Users with detailed profiles tend to be more risk averse than users with limited profiles	Lewis et al. (2008)	Quantitative	Survey	1710 students from a northeastern U.S. private university
		Paine, Reips, Stieger, Joinson, and Buchanan (2007)	Quantitative	Survey	530 respondents
		Fogel and Nehmad (2009)	Quantitative	Survey	205 undergraduates
		Park, Campbell, and Kwak (2012)	Quantitative	Survey	456 adult internet users
		Trepte, Dienlin, and Reinecke (2013)	Quantitative	Survey	327 German SNS users
	Positive correlation between “users’ education” and “concern with privacy issues and utilizing privacy protection”	O’Neil (2001)	Quantitative	Survey	1223 U.S. respondents
		Rainie et al. (2013)	Quantitative	Telephone interviews	1002 adults
		Blank et al. (2014)	Quantitative	Survey	2000 individuals aged 14 and older in England, Scotland, and Wales
Online users	Positive correlation between “user’s belief in the right to privacy” and “having online privacy concerns”	Yao et al. (2007).	Quantitative	Survey	413 undergraduates from a southwestern U.S. university
	Familiarity about integrity and safety settings amounts to a sense of security in action and to less apprehension about privacy issues	Jensen et al. (2005)	Quantitative	Survey	175 volunteers from U.S.
	Positive correlation between “user’s awareness of the society” and “privacy concerns”	Dinev and Hart (2005).	Quantitative	Survey	422 U.S. respondents
Online shoppers	Privacy leaks on websites will influence an online shopper’s trust of online sellers	Pan and Zinkhan (2006)	Quantitative	Telephone interviews	150 respondents
	“Privacy concerns” strongly impacting “customers’ insight of online seller’s service quality”	Wolfenbarger and Gilly (2003)	Quantitative	Online Survey	1013 respondents
		Dinev and Hart (2004)	Quantitative	Survey	369 respondents
		Xu, Dinev, Smith, and Hart (2008)	Quantitative	Survey	823 respondents
		Bandyopadhyay (2009)	Qualitative	Literature review	n/a

	Privacy concerns are initiated when online users are aware of organizations collecting information about them but do not precisely comprehend how the information is used	Smith et al. (1996)	Quantitative	Survey	147 U.S. business graduate students
		Milne and Boza (1999)	Quantitative	Mail survey	1,508 direct marketing consumers from U.S.
		Poddar, Mosteller, and Ellen (2009)	Qualitative	Interviews	21 internet users
		Wu, Huang, Yen, and Popova (2012)	Quantitative	Survey	500 participants (250 from Russia and 250 from Taiwan)
Research context	Specific focus	Authors	Research methodology	Data collection method	Sample
Online shoppers	Inverse relationship between “customer’s higher level of privacy concern” and “appreciation for personalized emails”	White, Zahay, Thorbjørnsen, and Shavitt (2008)	Quantitative	Experiments	86 (study 1) & 354 (study 2) undergraduates
	Control over information, short-term and long-term transactional relationships influence user’s privacy concerns.	Sheehan and Hoy (2000)	Quantitative	E-mail survey	889 U.S. consumers
Online marketing	Negative correlation between “privacy concern” and “information disclosure”; however, positive correlation between “privacy concern” and “protection intention”	Yang and Wang (2009)	Quantitative	Survey	458 Chinese university students
Online merchants	“Large-scale collection” and “processing of personal facts” causing “privacy concerns”	Preibusch, Peetz, Acar, and Berendt (2016)	Qualitative	Content analysis of personal information leakage patterns	881 most popular US web shops

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