



# Ethical decision-making in the Internet context: Development and test of an initial model based on moral philosophy

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## ABSTRACT

This paper proposes an ethical decision-making model in the Internet context based on moral theories and then empirically tests the model. The model posits that five moral philosophy variables—justice, relativism, egoism, deontology, and utilitarianism—affect ethical judgment; ethical judgment, in turn, affects behavioral intentions. To empirically test the model, four scenarios, real-life situations containing an ethical dilemma on the Internet, were developed and empirically analyzed by structural equation modeling with data from 111 university students.

The results showed the five moral philosophy variables affected ethical judgment, each having different effects according to the particular ethical situation. Also, justice, utilitarianism, and ethical judgment were found to influence behavioral intentions in ethical dilemma situations on the Internet.

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## 1. Introduction

The Internet—one of the most remarkable inventions in history—has become a crucial element for the affluent lifestyle of our time because it enables prompt and convenient communication, works as a repository for a rich amount of information and knowledge, and offers a variety of services helpful in everyday life. On the other side of the convenience aspect of the Internet lies as many adverse effects—abuse of personal information, verbal violence, copyright infringement, distribution of unhealthy information, and unethical behavior—related to anonymity and easy access to information. These have emerged as serious social issues.

Some of the unethical behaviors are fostered by characteristics of the Internet—sexual assault of a grammar school student was influenced by pornographic materials on the Internet, verbal abuse on the Internet that led to the suicide of a popular actress—and society is paying increasing attention to the matter of ethics on the Internet. Despite this increasing social attention to Internet ethics, theoretical and empirical examinations of ethical decision-making in the Internet context are in relatively short supply. One reason for the relative paucity of theoretical and empirical work on Internet ethics may be that we are currently lacking an ethical decision-making model in the Internet context. Bommer, Gratto, Gravander, and Tuttle (1987) argue that the absence of well-developed models of ethical and unethical behavior in a specific area reflects a dearth of research on factors affecting these behaviors and on the way in which these factors enter into the underlying decision-making process.

Although in the past, some researchers have proposed IT ethics models in information systems literature (e.g., Banerjee, Cronan, & Jones, 1998; Leonard, Cronan, & Kreie, 2004), the IT ethics models focus on the ethical behavior of IT personnel (e.g., programmer, IS operator). Today, anyone can use the Internet and it offers a variety of services to its users. However, its core characteristics: anonymity, ease of access, and ease of distribution make many types of unethical behavior easier (Karim, Zamzuri, & Nor, 2009). Thus, understanding self-regulation and individuals' normative philosophies may play a crucial role in ethical decision-making in the Internet context.

Accordingly, the objective of this research is to propose an ethical decision-making model that explains and predicts individuals' unethical behavior on the Internet. To this end, this research provides a model based on the traditional ethics theories of moral philosophy and organizes four scenarios of a real-life situation containing an ethical dilemma on the Internet for empirical analysis of the model. On an academic level, this research is expected to provide new themes in the IT field as preliminary research on the topic of Internet ethics, and on practical level, the research can provide guidelines for strengthening ethics in the Internet context and for building a healthy Internet culture.

## 2. Literature review

### 2.1. Moral philosophy in ethical decision-making models

Although the theory of planned behavior (Ajzen, 1985) is predominant and continues to be applied to ethical decision-making in an IT context (Banerjee et al., 1998; Cronan & Douglas, 2006; Leonard & Cronan, 2001; Leonard et al., 2004; Loch & Conger,

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1996), in business ethics literature, researchers have employed moral philosophies as their theory framework that explains the decision-making process for situations involving an ethical problem. Ferrell and Gresham (1985) and Hunt and Vitell (1986) are representative researchers.

In proposing a contingency model of ethical decision-making in a marketing organization, Ferrell and Gresham (1985, p. 88) argued that it is impossible to develop a framework of ethical decision-making without evaluating normative ethical standards derived from moral philosophy, and it is assumed that, knowingly or unknowingly, individuals may use a set of philosophical assumptions as a basis for making ethical decisions. Hunt and Vitell (1986) incorporated evaluation of two major normative ethical theories—teleological and deontological—in moral philosophy into their model as core factors of ethical judgment in developing a positive (or descriptive) theory of marketing ethics. They stated that, although these theories are normative to the extent that people actually follow their prescriptions, any positive theory of marketing ethics must incorporate them (Hunt & Vitell, 1986, p. 5). In proposing an integrated model that is a synthesis of the Ferrell and Gresham (1985) and the Hunt and Vitell (1986) models and the addition of Kohlberg's (1981) theory of cognitive moral development, Ferrell, Gresham, and Fraedrich (1989) argued that the rules one uses in making decisions are determined in different ways and constitute a major construct in the ethical process and that their rules are brought to the ethical decision-making process through moral philosophies. Namely, moral philosophies provide standards to judge the act, the actor's intention, and the consequences of that act (Ferrell et al., 1989, p. 56).

As well as ethical decision-making model building, in developing the multidimensional scale on ethical judgment, Reidenbach and Robin (1988) employed five popular moral philosophies: relativism, justice, egoism, utilitarianism, and deontology. They argued that, because these moral philosophies encompass most of the “great” ideas for social survival, the use of these moral philosophies provides a substantial beginning pointer for the development of a multidimensional scale to measure ethical judgments (Reidenbach & Robin, 1990, p. 640).

In information systems literature, some researchers have also emphasized the relationship between moral philosophy and IT ethics (Dorantes, Hewitt, & Goles, 2006; Ellis & Griffith, 2001; Laudon, 1995; Thong & Yap, 1998). In particular, Thong and Yap (1998) tested Hunt and Vitell's (1986) ethical decision-making theory based on normative ethical theories in a domain of information systems—softlifting. They argued that the moral philosophy perspective can provide a more formal systematic framework for assessing the ethical appropriateness of an individual's behavior. Thus, we employ traditional ethics theories from moral philosophy as a theoretical base for the present study.

## 2.2. Moral philosophies

The field of ethics contains several moral philosophies. In a business ethics context, Reidenbach and Robin (1988) classified moral philosophies into five ethical theories based on Beauchamp and Bowie (1983) and Donaldson and Werhane (1983)'s thorough discussions of the different philosophies of ethics. These include theories of justice, relativism, egoism, deontology, and utilitarianism. Each of these is explained in the following section.

Justice is a theory based on fairness and equality. Aristotle, the originator of the most fundamental concept of justice theory, developed a “principle of formal justice” that equals ought to be treated equally, and unequals ought to be treated unequally (Reidenbach & Robin, 1988). Namely, justice as a general concept means to treat like cases alike and to treat people according to fair rules (Devetak, Burke, & George, 2007, p. 110). According to Rawls (1971, p. 3), jus-

tice is the first virtue of social institutions, as truth is of systems of thought, and it begins with the basic structure of society in which the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation. Thus, justice is an essential basis of concepts in moral development literature. In Kohlberg's stages of moral development, the last three stages – authority and social-order-maintaining orientation, contractual/legalistic orientation and the morality of individual principles of conscience – are tied to specific concepts of justice (Reidenbach & Robin, 1988).

Relativism is the theory that morality is relative to culture or individuals and, therefore, no universal rules exist that apply to everyone (Reidenbach & Robin, 1988). Relativists maintain that all moral judgments are determined by either societal or individual standards, and that there is no single objective standard for morality. Relativism is attractive to social scientists because it explains away the variability of moral belief. It also provides a plausible way of explaining how ethics fits into the world as it is described by modern science (Britannica Online Encyclopedia, 2010).

Egoism is a teleological theory of ethics that one's self is, or should be, the motivation and the goal of one's own action. There are two main varieties of egoism: psychological egoism and ethical egoism. Psychological egoism, a descriptive form of egoism, is the view that everyone is motivated to act in his or her perceived self-interest. Ethical egoism, a normative form of egoism, states that the supreme principle of conduct is to promote one's well-being above all else's. But it does not require moral agents to ignore the well-being of others. Ethical egoism focuses on an individual's long-term self-interest. Therefore, in this formulation, it is possible for an individual to help others, help follow the rules of society, and give gifts if that person feels that those actions are in his or her own best interests (Reidenbach & Robin, 1990). Also, to ethical egoists, prudence and morality converge.

Deontology is a moral theory that holds that acts are inherently right or wrong, irrespective of the consequences of the acts. A central theme among deontological theorists is that people have a duty to do those things that are inherently right. Namely, that duty is to take the right action. Thus, to pay our debts, care for our children, or tell the truth is our duty because it is the “right” thing to do (Reidenbach & Robin, 1990). Deontology may be the most preferred ethical philosophy today. Ideas of deontology came to the general public through church, the Boy and Girl Scout pledges, ethical codes, and even the military (Reidenbach & Robin, 1990).

Utilitarianism—another teleological theory of ethics—is the idea that an action is determined solely by its contribution to happiness or pleasure as agreed among all people. Utilitarianism is commonly described by the phrase “the greatest good for the greatest number of people.” Therefore, it is also known as “the greatest happiness principle.” Utilitarianism forces the decision-maker to consider all of the outcomes of an action or inaction and to weigh one against another to determine that which is best for society (Reidenbach & Robin, 1990). Also, Reidenbach and Robin (1990) argued the general public learns about the ideas of utilitarianism through the democratic process, which is focused on majority rule.

## 3. Research model

The proposed ethical decision-making model in the Internet context is based on the traditional ethics theories of moral philosophy; therefore, we postulate the research model as follows: the five moral philosophy variables of justice, relativism, egoism, deontology, and utilitarianism affect ethical judgment. Ethical judgment, in turn, affects ethical behavioral intentions. In addition, justice, egoism, and utilitarianism also affect ethical behavioral intentions. Fig. 1 represents this research model.

As Ferrell and Gresham (1985) said, it is assumed that, knowingly or unknowingly, individuals may use a set of philosophical assumptions as a basis for making ethical decisions. Particularly because the Internet is non-restrictive and has the characteristics of anonymity, ease of access, and ease of distribution, personal normative beliefs derived from traditional moral philosophy play an important role in making decisions on the Internet—much more so than perceived environmental constraints such as rules and regulations. Therefore, we posit the hypotheses related to justice, relativism, egoism, utilitarianism, and deontology.

**Hypothesis 1.** Justice has a significant impact on ethical judgment in the Internet context involving an ethical problem.

**Hypothesis 2.** Relativism has a significant impact on ethical judgment in the Internet context involving an ethical problem.

**Hypothesis 3.** Egoism has a significant impact on ethical judgment in the Internet context involving an ethical problem.

**Hypothesis 4.** Utilitarianism has a significant impact on ethical judgment in the Internet context involving an ethical problem.

**Hypothesis 5.** Deontology has a significant impact on ethical judgment in the Internet context involving an ethical problem.

Consistent with general theories in ethics (Hunt & Vitell, 1986; Rest, 1986), we postulate that ethical judgment has an impact on behavioral intentions.

**Hypothesis 6.** Ethical judgment has a significant impact on behavioral intentions in the Internet context involving an ethical problem.

According to Hunt and Vitell (1986), ethical judgments often differ from behavioral intention because the teleological evaluation independently affects the intention construct. That is, an individual may perceive a particular alternative as the most ethical alternative but, nevertheless, intend to choose another alternative because of certain preferred consequences. Therefore, we also posit that the two teleological ideas of egoism, utilitarianism will have a significant impact on behavior intentions.

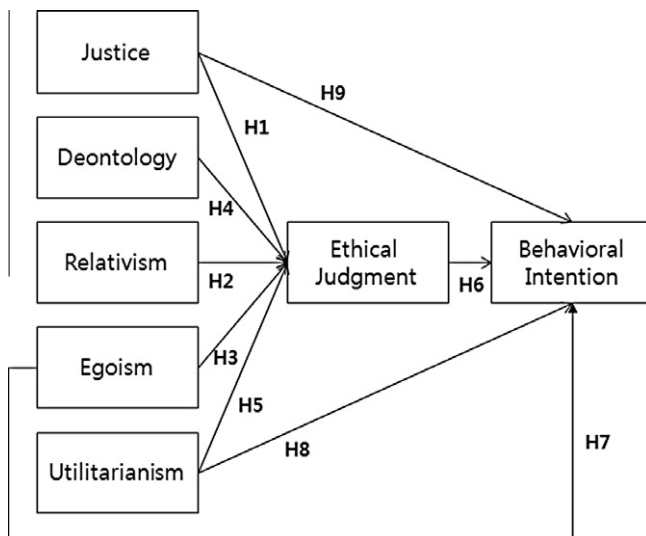


Fig. 1. Research model.

**Hypothesis 7.** Egoism has a significant impact on behavioral intentions in the Internet context involving an ethical problem.

**Hypothesis 8.** Utilitarianism has a significant impact on behavioral intentions in the Internet context involving an ethical problem.

Although the theory of justice as fairness is a deontological and not a teleological theory, we posit the following hypothesis based on equity theory. In the social psychology literature, justice is considered equivalent to “equity.” Equity theory has been used extensively in organizational behavior, marketing, and policy literature. It also has served as the basis for fairness in IT decision-making (Douglas, Cronan, & Behel, 2007; Joshi, 1989). Glass and Wood (1996) found perceived equity significantly influences an unethical behavioral intention such as pirating software. Thus, we posit:

**Hypothesis 9.** Justice has a significant impact on behavioral intentions in the Internet context involving an ethical problem.

## 4. Research methodology

### 4.1. Data collection

The surveys were conducted in classes with a convenient sample of university students in South Korea. In total, 111 questionnaires were analyzed. Males represent 66 respondents and females 45 respondents, approximately 88% of the respondents were ages 20–29, and 52% of the respondents did not follow a particular religion. Detailed descriptive statistics relating to the respondents' characteristics are shown in Table 1.

### 4.2. Scenarios used

Four separate scenarios were used. Each scenario represents a real-life situation containing an ethical dilemma relevant to Internet context. In order to develop the four scenarios, we first, analyzed the scenarios used in IS ethics studies (Banerjee et al., 1998; Chow, 2001; Leonard & Cronan, 2001) and then we visited newspaper websites and teaching Internet ethics web sites to get ideas and data. We developed four separate scenarios based on the ideas and data. The scenarios were reviewed by ethics professors and then modified according to their advice. Scenario 1 involved a privacy violation, scenario 2 involved the dissemination of unwholesome material such as obscene contents (it was adapted from Zippy scenarios for teaching Internet ethics (2010)), scenario 3 involved software piracy as a case of intellectual property infringement, and scenario 4 involved the spreading of false information. Each scenario was presented along with the “action” taken by a decision-maker; respondents were then asked a series of

Table 1  
Descriptive statistics of respondents' characteristics.

Measure	Value	Frequency (%)
Gender	Male	66 (59.5)
	Female	45 (40.5)
Age	Younger than 20	12 (10.8)
	20–29	98 (88.3)
	Older than 30	1 (0.9)
Religion	Christian	28 (25.2)
	Catholic	13 (11.7)
	Buddhist	16 (14.4)
	Other	2 (1.8)
	Atheist	52 (46.8)

**Table 2**  
Research scenarios.**Scenario #1**

One day, Tina received an e-mail from a famous online game company. According to the mail, the company was willing to offer her a coupon to play one of the company's well-known games for free when she simply registered on the company's website. Tina, who likes playing online games, visited the site, registered as a member, and enjoyed the game for a month. After a month, the game company sent another e-mail to Tina to make a suggestion: the company asked her to give the list of names and mail addresses of her friends in exchange of free game for another month.

*Action:* Although knowing that offering names and addresses might infringe on the privacy of others, Tina believed that it would benefit both company and the friends since the friends would be able to enjoy the game for free as well. Therefore, Tina finally gave the list to the company.

**Scenario #2**

Anthony and Matthew are the students at Blue Mountain High School. They are both ardent fans of a rock band Weki, which is famous for obscene words and performance, and created an online fan club for Weki in the web server of the high school using the space given to them, in order to share the activities of the band with others. They found music clips, lyrics, pictures, and various articles concerning the band on the Internet and posted them to the club. One day, however, the manager of the school web ordered Anthony and Matthew to shut down the club, saying that part of lyrics and many pictures contain obscene contents.

*Action:* Anthony and Matthew turned down the order of the manager, believing that the request infringed on the right of free speech, enumerated in the Constitution.

**Scenario #3**

SFSS is a company famous for its statistical software, and the company offers products divided into one version for companies and another for students. SFSS prices the software for students at \$1, which is reasonable. The company, however, makes the students sign a pledge that they will not make any illegal copies for others in 3 days prior to the purchase, in order to protect copyright. Louis purchased the software after filling out the pledge form. One day, Patrick, who is a friend of Louis, sent Louis an e-mail that his girlfriend urgently needed the software to write a term paper but she could not buy it through legal process. Therefore, Patrick requested Louis to copy the program, although it was illegal, for the sake of his girlfriend.

*Action:* Considering that Patrick's girlfriend needed the software without delay, Louis illegally copied the program and offered it to Patrick, although knowing that he made a pledge before the purchase.

**Scenario #4**

Linda is a junior at Muan University. One day, Linda purchased cosmetics from a famous company through the Internet and used them, but she suffered from skin trouble after a few days. Linda notified what she had experienced through an e-mail and requested a refund, but the cosmetics company rejected the request saying that many customers did not have any problem and what normally caused most of the skin troubles were individual's diathesis.

*Action:* Linda found the answers insincere and realized the products might inflict damage on others who have particular skin problems like she does. Therefore, she posted an anonymous message on the Internet, which is somewhat exaggerated, saying that the product had serious problems and she was suffering from serious sequelae after using it.

**Table 3**  
Operational definition of moral philosophy variables.

Construct	Definition
Justice	The belief that an act on the Internet is just and fair
Relativism	The belief that an act on the Internet is culturally or traditionally acceptable
Egoism	The belief that an act on the Internet promotes an individual's best long-term interests
Utilitarian	The belief that an act on the Internet maximizes benefits for more than just one person
Deontology	The belief that an act on the Internet is morally right and does not violate the rules

**Table 4**  
Descriptive statistics of data.

	Mean (SD) of construct			
	Scenario #1	Scenario #2	Scenario #3	Scenario #4
Justice	1.83 (1.16)	3.93 (1.77)	2.24 (1.30)	3.56 (1.84)
Relativism	2.62 (1.48)	3.18 (1.45)	4.34 (1.78)	3.98 (1.66)
Egoism	1.77 (1.08)	2.75 (1.37)	3.44 (1.34)	3.08 (1.43)
Utilitarian	3.48 (1.61)	3.89 (1.58)	3.45 (1.56)	3.15 (1.36)
Deontology	2.50 (1.43)	4.21 (1.50)	2.29 (1.36)	4.37 (1.67)
Ethical judgment	2.37 (1.32)	3.83 (1.52)	3.55 (1.35)	4.26 (1.44)
Behavioral intention	2.44 (1.96)	3.60 (2.18)	4.41 (2.16)	4.41 (2.05)

The scale for this study comprised two items from justice (just, fair), three items from relativism (culturally acceptable, traditionally acceptable, acceptable to my family), two items from egoism (prudent, self sacrificing), three items from utilitarianism (maximizes benefits while minimizing harm, results in positive cost-benefit ratio, maximizes pleasure), and four items from deontology (does not violate an unwritten contract, does not violate my ideas of fairness, morally right, does not violate an unspoken promise). A seven-point Likert scale was used to measure the items. In addition to these 14 items, three questions were added to the scale to evaluate an overall ethical judgment on the actions taken and indicate the behavioral intention. All the measurement items under factors are shown in [Appendix A](#).

Descriptive data concerning the research variables are shown in [Table 4](#). All the items ranged from 1 (strongly disagree) to 7 (strongly agree), and item means of the variables ranged from 1.77 (for egoism in scenario 1) to 4.41 (for behavioral intention in scenario 4). Its standard deviations ranged from 1.08 (for egoism in scenario 1) to 2.18 (for behavioral intention in scenario 2). Overall, the mean score for ethical judgment remained evenly dispersed in all scenarios, from unethical behavior (2.37 of scenario 1) to ethical behavior (4.26 of scenario 4), and behavioral intention showed a higher level of standard deviations than other constructs (the standard deviations were distributed from 1.96 to 2.18).

## 5. Results

The structural equation modeling approach was used to validate the research model. The partial least squares (PLS-Graph Version 3.0) method was employed to perform the analysis. PLS uses a component-based approach for estimation ([Chin, 1998](#)), and it places minimal restrictions on sample size and residual distributions ([Chin, Marcolin, & Newsted, 2003](#)). PLS is more appropriate for analyzing exploratory level studies, in contrast to covariance-based SEM techniques such as LISREL ([Gefen, Straub, & Boudreau,](#)

questions concerning the action, including its overall ethicalness (e.g., "His/her behavior is ethical"). All four scenarios appear in [Table 2](#).

### 4.3. Measurement development

Before developing the measurements we have defined the five moral philosophy variables as shown in [Table 3](#).

The measurements for moral philosophy variables were adapted from the multidimensional ethics scale of the [Reidenbach and Robin \(1988\)](#) after the content validity of the multidimensional ethics scale were fully established through reviewing business ethics literature (e.g., [Beauchamp & Bowie, 1983](#); [DeGeorge, 1986](#); [Donaldson & Werhane, 1983](#); [Hoffman & Moore, 1984](#)).



**Table 5**  
Results of confirmatory factor analysis.

Construct		Construct loading scores						t-Value	Construct loading scores						t-Value
		(1)	(2)	(3)	(4)	(5)	(6)		(1)	(2)	(3)	(4)	(5)	(6)	
Scenario 1															
Justice	A1	0.949	0.596	0.250	0.490	0.436	0.569	61.87	0.970	0.403	0.409	0.456	0.408	0.660	43.63
	A2	0.934	0.535	0.277	0.414	0.464	0.504	27.39	0.966	0.377	0.419	0.392	0.408	0.617	32.05
Relativism	A3	0.466	0.864	0.158	0.400	0.346	0.541	27.61	0.283	0.831	0.201	0.410	0.293	0.367	24.64
	A4	0.498	0.844	0.148	0.359	0.295	0.377	20.64	0.204	0.813	0.256	0.256	0.213	0.280	17.10
	A5	0.576	0.845	0.304	0.467	0.431	0.499	20.19	0.451	0.860	0.443	0.302	0.274	0.518	20.59
Egoism	A6	0.255	0.131	0.738	0.141	0.275	0.330	5.25	0.276	0.286	0.755	0.279	0.036	0.264	5.01
	A7	0.197	0.244	0.847	0.208	0.187	0.381	6.66	0.420	0.352	0.913	0.338	0.203	0.448	6.57
Utilitarianism	A8	0.319	0.431	0.105	0.768	0.211	0.440	12.91	0.349	0.331	0.284	0.857	0.259	0.429	14.11
	A9	0.363	0.330	0.194	0.815	0.307	0.449	16.81	0.348	0.321	0.426	0.858	0.266	0.447	16.18
	A10	0.466	0.363	0.242	0.753	0.251	0.387	8.36	0.400	0.319	0.225	0.795	0.339	0.422	11.01
Deontology	A11	0.238	0.266	0.206	0.149	0.692	0.275	8.90	0.320	0.067	0.035	0.185	0.777	0.257	7.87
	A12	0.437	0.348	0.310	0.299	0.871	0.443	24.84	0.298	0.157	0.041	0.196	0.800	0.273	24.31
	A13	0.498	0.418	0.245	0.360	0.870	0.461	27.68	0.373	0.370	0.145	0.374	0.870	0.452	23.45
	A14	0.367	0.367	0.175	0.239	0.891	0.394	31.77	0.368	0.334	0.159	0.308	0.812	0.375	26.30
Ethical judgment	A15	0.534	0.501	0.255	0.490	0.375	0.860	29.12	0.583	0.413	0.311	0.510	0.344	0.875	29.12
	A16	0.419	0.447	0.514	0.428	0.437	0.816	17.17	0.524	0.419	0.450	0.347	0.396	0.806	17.17
Scenario 2															
Justice	A1	0.941	0.113	0.155	0.296	0.261	0.415	33.61	0.956	0.695	0.578	0.295	0.445	0.587	61.60
	A2	0.943	0.198	0.209	0.329	0.259	0.422	58.18	0.955	0.677	0.583	0.278	0.406	0.584	59.90
Relativism	A3	0.151	0.915	0.289	0.134	0.028	0.380	35.59	0.672	0.894	0.388	0.306	0.436	0.557	34.14
	A4	0.028	0.891	0.172	0.098	0.013	0.314	27.31	0.635	0.928	0.482	0.345	0.436	0.542	65.28
	A5	0.227	0.896	0.201	0.234	0.066	0.482	30.31	0.645	0.897	0.514	0.220	0.489	0.583	41.48
Egoism	A6	0.075	0.315	0.876	0.217	0.156	0.207	3.08	0.385	0.337	0.783	0.146	0.217	0.425	11.16
	A7	0.275	0.008	0.662	0.305	0.077	0.168	2.12	0.597	0.489	0.860	0.389	0.339	0.487	20.09
Utilitarianism	A8	0.264	0.135	0.369	0.762	0.022	0.364	9.58	0.262	0.263	0.298	0.917	0.140	0.346	10.54
	A9	0.373	0.250	0.285	0.887	0.151	0.479	32.94	0.259	0.313	0.298	0.801	0.183	0.272	6.22
	A10	0.117	0.010	0.105	0.732	0.210	0.340	8.68	0.162	0.145	0.165	0.530	0.021	0.103	2.89
Deontology	A11	0.149	0.042	0.132	0.052	0.749	0.108	3.61	0.314	0.335	0.229	0.076	0.854	0.341	26.61
	A12	0.308	0.180	0.132	0.039	0.768	0.071	4.65	0.421	0.423	0.358	0.089	0.890	0.336	28.11
	A13	0.239	0.001	0.047	0.196	0.935	0.204	6.13	0.483	0.552	0.339	0.265	0.837	0.413	19.94
	A14	0.267	0.084	0.025	0.181	0.886	0.136	8.27	0.294	0.394	0.251	0.075	0.886	0.313	32.98
Ethical judgment	A15	0.322	0.515	0.224	0.456	0.049	0.947	32.05	0.390	0.514	0.383	0.271	0.391	0.809	14.52
	A16	0.495	0.005	0.139	0.320	0.394	0.523	3.30	0.599	0.483	0.514	0.284	0.269	0.802	13.75
Scenario 3															
Scenario 4															

2000). Thus, we chose PLS to accommodate the exploratory research as well as the presence of a relatively lean sample size.

### 5.1. Reliability and validity of measurement items

Partial least squares can test the convergent and discriminant validity of the scales. In a confirmatory factor analysis by partial least squares, convergent validity is proved if a measurement loads highly (with a coefficient higher than 0.60) or very significantly (if its *t*-values are within the 0.05 level of their assigned construct [Gefen & Straub, 2005]). Table 5 shows the factor loadings of the measurement items and *t*-values.

All *t*-values surpass the recommended level, with 1.96 demonstrating convergent validity, and the factor loadings of most items are also higher than 0.60.

Discriminant validity is shown when two things happen: (1) measurement items load more strongly on their assigned construct than on the other constructs in a confirmatory factor analysis and (2) the square root of the average variance extracted (AVE) of each construct is larger than its correlations with the other constructs (Gefen & Straub, 2005).

As shown in Table 5, all the measurement items loaded considerably more strongly in their respective factors than in the other constructs. Table 6 shows the square root of AVE and the inter-construct correlations. The construct correlations between justice and relativism in scenario 1 (0.603) and scenario 4 (0.718) are quite

high. However, comparison of the correlation with the square root of AVE shows that all correlations between two constructs are less than the square root of AVE of both constructs. Thus, we can conclude that discriminant validity exists between the measurements for all constructs.

To assess the reliability of measurement items, we computed the composite construct reliability coefficient. Composite reliabilities ranged from 0.722 (for ethical judgment in scenario 2) to 0.968 (for justice in scenario 3), which exceeded the recommended level of 0.70 (Bagozzi & Yi, 1988). The AVE ranged from 0.585 (for ethical judgment in scenario 2) to 0.937 (for justice in scenario 2), which exceeded the recommended level of 0.50 (Fornell & Larcker, 1981). The results, therefore, demonstrate a reasonable reliability level of the measured items.

### 5.2. Common method bias

To overcome the concern of common method bias in the survey design, we first used scenarios in the methodological approach to standardize the social stimulus across respondents (Alexander & Becker, 1978). Second, common method variance was assessed after the data were collected using Harman's one-factor test. In this test, all the principal constructs are entered into a principal components factor analysis. Evidence for common method bias exists when a single factor emerges from the analysis or when one general factor accounts for the majority of the covariance among the

**Table 6**

Square root of AVE and inter-construct correlations and composite reliability.

Construct	Factor						CCR <sup>*</sup>	AVE <sup>**</sup>
	(1)	(2)	(3)	(4)	(5)	(6)		
<i>Scenario 1</i>								
Justice	(0.941)						0.939	0.886
Relativism	0.603	(0.851)					0.887	0.724
Egoism	0.279	0.243	(0.794)				0.773	0.631
Utilitarianism	0.482	0.484	0.224	(0.779)			0.822	0.607
Deontology	0.477	0.425	0.283	0.326	(0.835)		0.901	0.697
Ethical judgment	0.572	0.566	0.448	0.549	0.481	(0.838)	0.826	0.703
<i>Scenario 2</i>								
Justice	(0.942)						0.940	0.887
Relativism	0.166	(0.901)					0.928	0.811
Egoism	0.193	0.246	(0.777)				0.749	0.603
Utilitarianism	0.332	0.183	0.317	(0.796)			0.838	0.634
Deontology	0.276	0.044	0.082	0.163	(0.838)		0.904	0.703
Ethical judgment	0.444	0.449	0.242	0.503	0.172	(0.765)	0.722	0.585
<i>Scenario 3</i>								
Justice	(0.968)						0.968	0.937
Relativism	0.404	(0.835)					0.873	0.697
Egoism	0.427	0.383	(0.838)				0.824	0.702
Utilitarianism	0.439	0.387	0.370	(0.837)			0.876	0.701
Deontology	0.422	0.316	0.130	0.346	(0.815)		0.888	0.665
Ethical judgment	0.660	0.492	0.443	0.517	0.435	(0.841)	0.828	0.708
<i>Scenario 4</i>								
Justice	(0.956)						0.954	0.913
Relativism	0.718	(0.907)					0.933	0.822
Egoism	0.608	0.509	(0.822)				0.807	0.676
Utilitarianism	0.300	0.319	0.338	(0.767)			0.803	0.588
Deontology	0.445	0.501	0.344	0.156	(0.867)		0.924	0.752
Ethical judgment	0.613	0.619	0.556	0.344	0.410	(0.806)	0.787	0.649

(): Square root of AVE.

\* CCR: Composite construct reliability.

\*\* AVE: Average variance extracted.

measurements (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In all scenarios, several factors came from the analysis and the first factors from scenario 1 to scenario 4 explained 38.4, 36.3, 26.6 and 43.2, respectively. Namely, the results do not indicate substantial common method bias.

### 5.3. Hypothesis testing analyses

To test the hypotheses of the ethical decision-making model in the Internet context, we examined the coefficients of the causal relationships between constructs, which would validate the hypothesized effects. The coefficients and their *t*-value on the structural model and the coefficients of determination ( $R^2$ ) for dependent construct are shown in Table 7.

As indicated in Table 7, the results show that justice has a significant impact on ethical judgment, with  $\alpha = 0.05$  in all scenarios

except scenario 4. Although the significance level of justice did not attain  $\alpha = 0.05$  in scenario 4, it was higher than  $\alpha = 0.10$ ; therefore, Hypothesis 1 was supported. Relativism also has a significant impact on ethical judgment, with  $\alpha = 0.05$  in all scenarios. Consequently, Hypothesis 2 was also accepted. The impact of egoism on ethical judgment was significant at  $\alpha = 0.05$  in scenarios 1 and scenarios 4, but was not significant in scenarios 2 and scenarios 3. Hypothesis 3 was partially accepted. Utilitarianism, like justice, has a significant impact on ethical judgment with  $\alpha = 0.05$  in all scenarios except scenario 4. Therefore, Hypothesis 4 was also partially supported. The impact of deontology on ethical judgment was a significant at  $\alpha = 0.05$  in scenarios 1 and scenarios 3, but was not significant in scenarios 2 and scenarios 4. Hypothesis 5 was also partially accepted.

In the behavioral intention-related hypotheses testing, ethical judgment has a significant impact on behavioral intention, with

**Table 7**

Hypothesis testing results of Internet ethical model.

Hypothesis	Path	Path coefficient (t-value)			
		Scenario #1	Scenario #2	Scenario #3	Scenario #4
H1	Justice → Ethical Judgment	0.18 (2.30)*	0.25 (3.13)**	0.40 (3.48)**	0.21 (1.60)*
H2	Relativism → Ethical Judgment	0.21 (2.51)**	0.35 (4.54)**	0.18 (1.85)*	0.28 (3.35)**
H3	Egoism → Ethical Judgment	0.25 (3.38)**	0.00 (0.04)	0.12 (1.61)*	0.22 (2.30)**
H4	Utilitarianism → Ethical Judgment	0.26 (2.92)**	0.34 (4.19)**	0.18 (1.77)*	0.10 (1.25)
H5	Deontology → Ethical Judgment	0.15 (1.73)*	0.06 (0.76)	0.13 (1.74)*	0.08 (0.99)
H6	Ethical Judgment → Behavioral Intention	0.49 (4.83)**	0.77 (9.72)**	0.40 (3.40)**	0.71 (8.99)**
H7	Egoism → Behavioral Intention	−0.03 (0.38)	−0.00 (0.04)	−0.07 (0.76)	−0.05 (0.53)
H8	Utilitarianism → Behavioral Intention	0.18 (1.73)*	0.05 (0.52)	0.04 (0.66)	−0.14 (1.85)*
H9	Justice → Behavioral Intention	0.10 (1.05)	−0.03 (0.41)	0.39 (2.92)**	0.21 (2.60)**
Ethical judgment $R^2$		0.546	0.556	0.452	0.556
Behavioral intention $R^2$		0.438	0.506	0.608	0.506

\* Significant at the 0.10 level.

\* Significant at the 0.05 level.

\*\* Significant at the 0.01 level.

$\alpha = 0.01$  in all scenarios. Thus Hypothesis 6 was supported. But, egoism, a teleological theory of ethics, has no significant impact on behavioral intention in all scenarios, and utilitarianism—another teleological theory of ethics—has a significant impact on behavioral intention with  $\alpha = 0.05$  in scenarios 1 and 4. Also, justice has a significant impact on behavioral intention with  $\alpha = 0.05$  in scenarios 3 and 4. Consequently, Hypothesis 7 was rejected, and Hypothesis 8 and Hypothesis 9 were partially supported.

The results being greater than 45% of the variance of ethical judgment are explained by moral variables and greater than 43% of the variance of behavioral intention by ethical judgment, egoism, utilitarian, and justice in all scenarios.

## 6. Discussion and conclusion

A review of the results indicates that, generally speaking, the model showed a satisfactory fit. All the hypotheses that the five moral philosophies have a significant impact on ethical judgment in the Internet context involving an ethical problem are supported in this study. Also, most of the hypothesized relationships between selected moral philosophers and behavioral intention were supported in this study (except the relationship between egoism and behavioral intention). Although some of the hypotheses are not fully supported in all of the scenarios, these results imply that the five moral philosophies ideas have different effects on individuals' ethical decision-making according to the particular ethical situation.

Justice and relativism were found to influence ethical judgment in all ethical dilemma situations, whereas egoism, utilitarianism, and deontology were found to influence ethical judgment in a given ethical dilemma situation. Today, justice is suggested to be a basis for moral behavior. Also, it has been claimed that justice, the first virtue of social institutions, has an important influence on an individual's decision-making process in various areas including ethical judgments. Therefore, it is reasoned that the justice idea, regardless of any given environment, plays an important role in forming an individual's ethical behaviors on the Internet. Relativism, which is the ethics theory based on a subjective belief derived from the experiences of individuals or groups, provides a plausible way of describing an individual's ethical or unethical behavior. In the study, relativism can be regarded as a similar concept of subjective norm of the theory of reasoned action (TRA; Fishbein & Ajzen, 1975). As it has been demonstrated in several studies, the subjective norm along with the attitude of individuals has an important effect on individual's decision-making in various areas. Thus, it is thought that relativism, as a subjective belief, has a significant influence on an individual's ethical decision-making on the Internet. Egoism and utilitarianism are teleological theories of ethics. Teleological theory is characterized primarily by a focus on the consequences from any action. The consequences can be divided into "for the self" or "for the greatest number." Egoism is concerned with good for the self, whereas utilitarianism is concerned with the greatest good for the greatest number. Sometimes, the particular ethical dilemma situations force a choice between good for the self and good for a great number of people. Therefore, it is deduced that the ethical decision-making in these situations is influenced by either egoism ideas or utilitarianism ideas. Scenarios 2 and 4 in this study may be examples of these situations.

Deontology has no significant impact on ethical judgment in scenarios 2 and 4. Also, in scenario 3, despite clear attempts to avoid contractual obligations, the impact of deontology on ethical judgment appears smaller than those of other moral philosophies. One potential explanation for these results may be the existence of anonymity on the Internet. Anonymity is known to increase the likelihood that people will transgress rules and laws. Consequently, deontology ideas focusing on duties, rules, and obligations may have

less of an impact on individuals' ethical judgment on the Internet, which is characterized by anonymity.

As Hunt and Vitell (1986) argued, utilitarianism, one of the teleological theories of ethics, had a significant impact on behavioral intention. But egoism, another teleological theory of ethics, did not have a significant impact on behavioral intention. Although we failed to prove the impact of egoism on behavior intention in this study, we believe that egoism ideas may have a significant impact on individuals' behavior intention when a particular ethical situation is presented. Also, despite a deontology theory of ethics, justice also has a significant impact on behavioral intention in this study. Having been proved in diverse literature, justice as perceived equity may have a direct impact on behavioral intention ethically or unethically.

### 6.1. Implications for researchers

First of all this study is expected to activate Internet ethics studies as preliminary research on Internet ethics. In this study, we proposed an initial model on ethical decision-making in the Internet context that explains and predicts an individuals' unethical behavior on the Internet. We then empirically tested the model with the hypotheses that five moral philosophy variables—relativism, egoism, justice, deontology, and utilitarianism—significantly influence ethical judgment. In particular, justice and utilitarianism variables have a significant influence on behavioral intentions in terms of ethics. Namely, our model as a research framework can be used in the studies, which is to identify factors affecting an individual's ethical decision-making process in the Internet context and to explore the effect of situational factors such as gender, age, and religion on an individual's ethical decision-making process in the Internet context. Second, we found that justice and relativism influenced ethical judgment in all ethical dilemma situations, whereas egoism, utilitarianism, and deontology influenced ethical judgment in a given ethical dilemma situation. Namely, our results imply that the effects of an individual's egoism, utilitarianism, and deontology ideas on ethical decision-making can vary greatly depending on the ethical situation he's facing on the Internet. Therefore, the results of this study could be used as a basis for empirical research to clarify the relationship between the moral philosophy variables and ethical dilemma situation. Third, we have developed four scenarios on privacy violation, dissemination of unwholesome material, intellectual property infringement, and the spreading of false information; these are real-life situations containing an ethical dilemma relevant to Internet context. The scenario approach, widely used in business ethics studies, is an unbiased self-report, accurate in measurement, and appropriate when the issues being measured are sensitive (Rallapalli, Vitell, & Barnes, 1998). Although diverse scenarios containing an ethical dilemma have been developed in business, accounting, marketing and information systems literature, academic level scenarios of ethical dilemmas in the Internet context are extremely rare. Therefore, the scenarios developed in this study could prove to be essential to researchers conducting these kinds of studies.

### 6.2. Implications for practitioners

The results of this study provide guidelines for strengthening ethics in the Internet context and for building a healthy Internet culture. This study shows justice has a strong impact on ethical judgment in all ethical dilemmas and indicates that to be effective in Internet ethics education, it is important to inculcate the correct concepts of justice and fairness in students. Namely, it is desirable to foster the ability to judge what is justice and fairness through a variety of ethical case analyses. Also, this study's indicated socio-cultural effects (relativism) appear to be more influential than

moral or contractual obligations (deontology) for ethical judgment. These effects imply that to curb unethical behavior on the Internet, it is more desirable to actively inform people of the evils of unethical behavior than to emphasize the importance of moral and social commitment. One method is the use of advertisements in mass media, such as TV broadcasts explaining how unethical behavior on the Internet affects negatively both society as a whole as well as individuals. Another method is to hold Internet ethics camps for parents. Most unethical behavior on the Internet in today's world comes from young people. As such, holding educational camps teaching parents the ethical issues involving youngsters and Internet use would be a great idea. They after all have the greatest impact and control on their children's education. This could prove an effective way to prevent and put to end unethical behavior on the Internet originating from young people.

### 6.3. Limitations and further research issues

Although this study provides meaningful implications, it has some limitations. First, this study did not involve situational factors; thus, we did not fully explain why some moral philosophies did not impact ethical judgment and behavioral intentions in the particular ethical situation. Thus, future studies should involve situational factors in this model and empirically test the model. In the ethics literature, these situational factors include moral intensity (Jones, 1991), ego strength (Trevino, 1986), and gender or age. Second, this study empirically tested the model with a limited number of scenarios; thus, we did not get a satisfactory result with regard to egoism. Therefore, future studies should develop the more scenarios for depth analyzing the model. Third, this study was conducted with a sample of university students. According to a review of the empirical ethical decision-making literature (O'Fallon and Butterfield, 2005), some studies indicated that younger generation individuals gave less ethical responses (e.g., Kim & Chun, 2003). In our study, the impact of deontology on ethical judgment appears smaller than those of other moral philosophies. Student samples might have impacted these findings. Therefore, future research should be tested with samples from a wider range of the population. Finally, according to Hofstede's (1991) study, Korea is typically considered a relatively collectivistic society. This study showed that relativism ideas have a strong impact on ethical judgment in most ethical dilemmas. This may be caused by the fact that individuals tend to form their judgments based on group norms in a collectivistic culture (Hofstede & Bond, 1988). Namely, conducting our study in Korea might have impacted some of our findings. Therefore, in order to verify the results, the study should be ideally conducted in other countries as well.

## Appendix A

### Perception of Justice: Seven-point Likert-type scale from strongly disagree to strongly agree

- A1. His/her behavior is just.
- A2. His/her behavior is fair.

### Perception of Relativism: Seven-point Likert-type scale from strongly disagree to strongly agree

- A3. His/her behavior is culturally acceptable.
- A4. His/her behavior is traditionally acceptable.
- A5. His/her behavior is acceptable to my family.

### Perception of Egoism: Seven-point Likert-type scale from strongly disagree to strongly agree

- A6. His/her behavior is prudent.
- A7. His/her behavior is self sacrificing.

### Perception of Utilitarianism: Seven-point Likert-type scale from strongly disagree to strongly agree

- A8. His/her behavior maximizes benefits while minimizes harm.
- A9. His/her behavior results in positive cost-benefit ratio.
- A10. His/her behavior maximizes pleasure.

### Perception of Deontology: Seven-point Likert-type scale from strongly disagree to strongly agree

- A11. His/her behavior does not violate an unwritten contract.
- A12. His/her behavior does not violate my ideas of fairness.
- A13. His/her behavior is morally right.
- A14. His/her behavior does not violate an unspoken promise.

### Perception of Ethical Judgment: Seven-point Likert-type scale from strongly disagree to strongly agree

- A15. His/her behavior is acceptable.
- A16. His/her behavior is ethical.

### Perception of Behavioral Intention: Seven-point Likert-type scale from strongly disagree to strongly agree

- A17. I intend to do like him/her.

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