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AN INTEGRATIVE FRAMEWORK TO UNDERSTAND THE INFLUENCE OF MORALITY ON GREEN IS ADOPTION: A THEORETICAL PERSPECTIVE

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ABSTRACT

The prevailing gap in the Green information systems (IS) research literature is the absence of a theoretical framework to understand the influence of environmental beliefs and attitudes on the adoption of Green IS initiatives. The purpose of this study is to fill this gap by developing an integrated framework by identifying and examining the factors that influence the proenvironmental behaviors (PEBs) of managers to adopt Green IS initiatives. The framework is firmly grounded using three theoretical frameworks: (1) upper echelon theory, (2) refined theory of basic individual values, and (3) norm activation model. The theoretical lenses of these three frameworks are utilized to assess the influence of moral behavior on practicing of Green IS initiatives by the managers of organizations. Theoretical and practical implications of the study for the benefit of IS researchers and managers are discussed. Furthermore, the empirical evaluation and assessment plan of propositions, together with the future extensions of the study are presented.

Keywords: *Green IS, Upper echelon theory, Norm activation theory, proenvironmental, Sustainability*

1. INTRODUCTION

Environmental sustainability degradation is one of the serious and perhaps greatest global issues and challenges facing human beings [1]. Although, the environmental degradation can be caused by human activities or natural variations, but scholars have concluded that the main cause of climate change is anthropogenic [2]. Furthermore, organizations are regarded among the most contributors to climate change [3], and in response many organizations have begun to adopt environmental management systems formally and informally [4]. In respond to an increasing social, cultural, and legislative pressures that expand the responsibility of firms to increase attention to environmental concerns, chief executives have increasingly committed to Green Information Systems (IS) [5] which reflect the positive influence of IS to improve the environmental sustainability of organizations and society [6].

Despite the importance of organizational Green motivations, actions, and factors that influence the adoption of these initiatives, they only tell part of the story [7]. These studies have expanded our knowledge regarding the macro level factors influencing the adoption of Green IS [5, 8]. Hence, different from previous studies, this study attempts to investigate how micro-level factors influence the organizational decision-makers' (e.g., C-level executives, senior managers, and IT managers) intention towards the adoption of Green IS.

Upper echelons theory (UET) [9] framed the research questions of this study. The underlying premise of UET is that executives interpret their strategic environment through their personal experiences, values, and personalities, and their strategic choices are made upon those backgrounds [9]. The framework of upper echelons theory provides a basis for the following research questions:

- What values and cognition factors impact the intention of managers to adopt Green IS?
- What characteristics composition factors moderate the influential relationship of values and cognitions on managers' intention to adopt Green IS?

Addressing these questions is important for the following. First, based on Liedtka [10], who asserted that "organizations do not make decisions – [but] individuals do", although, there are some factors driving organizations to adopt Green IS, but

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Table 1: List of Reviewed Journals and Conferences

Name	Acronym
Journals	
Management Information Systems Quarterly	MIS Quarterly
Information Systems Research	ISR
Journal of Management Information Systems	JMIS
Journal of the Association for Information Systems	JAIS
Communications of ACM	CACM
European Journal of Information Systems	EJIS
Information Systems Journals	ISJ
Journal of Strategic Information Systems	JSIS
Journal of Information Technology	JIT
Journal of Computer Information Systems	JCIS
Information Systems Frontier	ISF
Information and Management	IM
Communications of the Association for Information Systems	CAIS
Australian Journal of Information Systems	AJIS
Academy of Management Journal	AMJ
Conference proceedings	
International Conference on Information Systems	ICIS
Hawaii International Conference on System Sciences	HICSS
American Conference on Information Systems	AMCIS
Australian Conference on Information Systems	ACIS
Pacific Asia Conference on Information Systems	PACIS

still the final decision is made by senior managers. Hence, the role of organizational decision-makers in Green IS adoption should not be ignored. Second, the importance of champions' role in adopting organizational Green IT is already proven in the literature [11]. In the context of Green IS adoption studies in organizations, none of the studies investigated how the values and cognitions of managers and champions can influence their environmental ethical decision intention towards the adoption of Green IS initiatives. The importance of manager's environmental attitudes on corporate environmental responsiveness has been already highlighted in the literature [12]. They suggest that "managers who are aware of the consequences of human-nature interaction and feel compelled to take corrective actions, view organizations as a field to materialize their environmental concerns, by making the appropriate strategic decisions" [13]. Third, related to IT adoption, the influence of organizational demographic factors such as age, gender, and education level of senior executives on the adoption of IT has recently become the interest of this area [14]. In the context of Green IS, there is no study examining the relationship between the managerial characteristics of executives and their intention to adopt Green IS.

The rest of the paper is organized as follows. Firstly, the prior research are reviewed. Secondly, theoretical background of the study is presented. Thirdly, the theoretical framework and related propositions are developed. Finally, the implications of the study both for research and practice together with conclusion are discussed.

2. PRIOR RESEARCH

To conduct a comprehensive search for primary studies on the Green IT adoption we examined both academic journals and conference proceedings. In terms of the academic journals. Table 1 exhibits the list of reviewed journals and conference proceedings.

Table 2 exhibits the theories and models applied in the reviewed studies on organizational Green IT/IS adoption. It is obvious that most of the studies are focusing on strategic and commercial imperatives as the drivers of Green IS adoption while the level of analysis is organization itself [15]. Decisions within the organizations may be made from economic, legal, or moral point of views [16]. Morality is defined as "interlocking set of values, practices, institutions, and evolved psychological mechanisms that work together to suppress or regulate selfishness and make social life possible" [17]. The decision which is based on morality is called moral decision-making or moral judgment [18]. Gully, et al. [19] argue that in order to meet the needs of the firm's stakeholders including the natural environment, there should be a clearer and more explicit moral decision-making.

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Table 2: Theories and Models Used in Organizational Green IT/IS Adoption Studies

Theories and Models	Example study
Organization-level theories	
Institutional Theory	Deng and Ji [20]
Natural-Resource-Based View of the Firm	Deng and Ji [20]
Technology-Organization-Environment	Zheng [21]
Transaction Cost Theory	Nedbal, et al. [22]
Resource-Based-View	Deng and Ji [20]
Advanced Model of Corporate Ecological Responsiveness	Simmonds and Bhattacherjee [23]
Organizational Culture Theory	Deng and Ji [20]
Organizational Motivation Theory	Molla and Abareshi [24]
Corporate Ecological Responsiveness	Yang, et al. [25]
Topology of Legitimacy	Lin, et al. [26]
Stakeholder Theory	Cai, et al. [27]
Belief-Action-Outcome	Gholami, et al. [28]
Individual-level theories	
Diffusion of Innovation Theory	Nedbal, et al. [22]
Theory of Planned Behavior	Pollard [29]
Norm Activation Model	Lei and Ngai [30]
Elaboration Likelihood Model	Dalvi Esfahani, et al. [31]
Motivation-Ability Theory	Karanasios, et al. [32]
Utilitarian Theory	Karanasios, et al. [32]
Belief-Action-Outcome	Molla, et al. [7]
Theory of Reasoned Action	Mishra, et al. [33]
Technology Acceptance Model	Akman and Mishra [34]

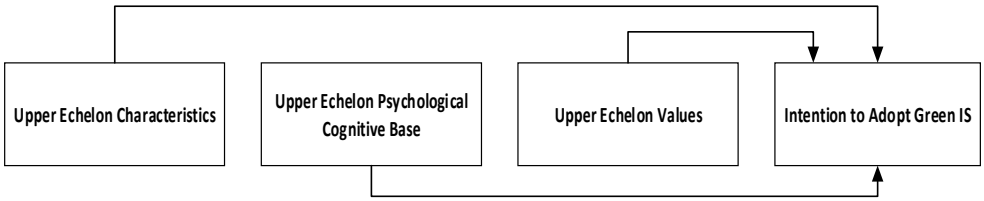

Figure 1: Conceptual Model based on Upper Echelon Theory

Hence, it can be concluded that, while economic and legal imperatives are the obvious motives to adopt new technologies, they are not the sole drivers of Green IS adoption in organizations. This claim is also in line with the study by Melville [2] who says "… distinctive characteristics of the environmental sustainability context, such as values and altruism, affect intention to use and usage of Information Systems for environmental sustainability".

3. THEORETICAL FOUNDATION

The study's conceptual framework is based on the upper echelons theory (see Figure 1). To answer the abovementioned research questions, we draw upon norm activation theory (NAT) and the refined theory of basic individual values. The NAT explains how an individual behaves pro-socially and proenvironmentally through activation of her moral obligation. And, the role of personal values as the guiding principles in the individual's life is discussed in values theory. We believe that the synergy of these three theories and theoretical frameworks (i.e., UET, NAT, and values theory) would help us in understanding of the effect of proenvironmental beliefs and attitudes on the adoption of Green IS by organizational decision-makers.

3.1. Norm Activation Theory

Norm activation theory (NAT), developed by Schwartz [35] in the context of altruistic behavior, has been widely applied to study various kinds of pro-social behavior [36]. Pro-social behavior refer to an act that can benefit other persons such as helping, sharing, and proenvironmental behavior

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[37]. In accordance to Schwartz [35], the NAT posits three antecedents for predicting individuals' pro-social behaviors as, awareness of consequences, ascription of responsibility, and personal norms. Awareness of consequences is described as "whether someone is aware of the negative consequences for others or for other things one value when not acting pro-socially" [37]. Ascription of responsibility refers to "feelings of responsibility for the negative consequences of not acting pro-socially" [37].

According to NAT, the pro-social behavior of an individual is positively influenced by one's personal norm. This mean "when one experiences a feeling of moral obligation to act pro-socially, one will be motivated to engage in these pro-social behaviors to align with one's value systems" [38]. Personal norm of an individual is activated by one's awareness of consequences and ascription of responsibility. This means when one feels the negative consequences of not acting pro-socially and their own responsibility of not acting pro-socially, one will develop a high moral obligation to act pro-socially, i.e. personal norm. Furthermore, one's ascription of responsibility would be promoted by awareness of consequences. This is because only when people feel the negative consequences, they are likely assign these consequences to themselves and ascribe the responsibility. Otherwise, when they do not feel the negative consequences, ascription of responsibility is not likely to be developed.

3.2. Values and the Schwartz Value System

The Values Theory defines values as "desirable, trans-situational goals, varying in importance that serves as guiding principles in people's lives" [39]. When individuals are asked to give judgment about stimuli like environment, people, and objects, they often refer to their values as a rule [40]. Based on the previous studies on the Values Theory, Schwartz and his colleagues [41] identified six features of basic values as "(1) values are beliefs linked inextricably to affect; (2) values refer to desirable goals that motivate action; (3) values transcend specific actions and situations; (4) values serve as standards or criteria; (5) values are ordered by importance relative to one another; (6) the relative importance of multiple values guides action".

4. THEORETICAL FRAMEWORK AND PROPOSITIONS

The research model of the study is developed based on the extension of the conceptual model depicted above (see Figure 1) through the synergy of the UET, NAM, and the refined theory of basic individual values by Schwartz , et al. [41]. We postulate that the attitudinal factors, consisting beliefs, attitudes and norms influence individuals to perform environmentally significant behaviors. Based on the NAM, the immediate predictor of proenvironmental intention and behavior is personal norm. Following the NAM, personal norm of an individual is activated by his/her awareness of consequences and ascription of responsibility. The correlation among environmental attitudes and proenvironmental behavior has been the focus of several studies in environmental psychology studies. As defined by Tarrant and Cordell [42] environmental attitudes "describe the extent to which people evaluate beliefs about natural resources as desirable (i.e., as good or bad, positive, or negative)". In the environmental psychology studies, scholars differentiate general and specific environmental attitudes. General environmental attitudes describes the environmental orientation of individuals, while specific environmental attitudes are the attitudes towards issues related to the specific issue, its usage, and impact on the environment [43].

Furthermore, according to the theory of reasoned action [44], the immediate predictor of actual behavior is the behavioral intention. Theory of planned behavior [45] proposes the behavior as a function of a willingness to perform a behavior (i.e. intention). Regarding the technology adoption in the literature, it is already asserted that the intention to act is a better predictor of the actual behavior, than just merely evaluating the technology [46]. Huijts, et al. [47] asserted that by studying the intention, policy makers can benefit the early knowledge of how individuals will respond prior to the actual observable behavior. Hence, it this study we are going to study the determinant of managers' intention to act towards the adoption of Green IS. Figure 2 depicts the structure of the proposed research framework graphically.

4.1. Personal Norm

As stated by Ajzen [45] and Schwartz [48], the individuals' personal norms regarding the specific behavior is their sense of personal responsibility or moral obligation towards engaging in that behavior. Undoubtedly, the environmental issues require the moral component of individuals and behaving towards the environment responsibly [49]. Furthermore, Thøgersen [50] argued that environmental issues should be belonged to moral behaviors rather than economic ones, which instead of balancing costs and benefits, the environmental

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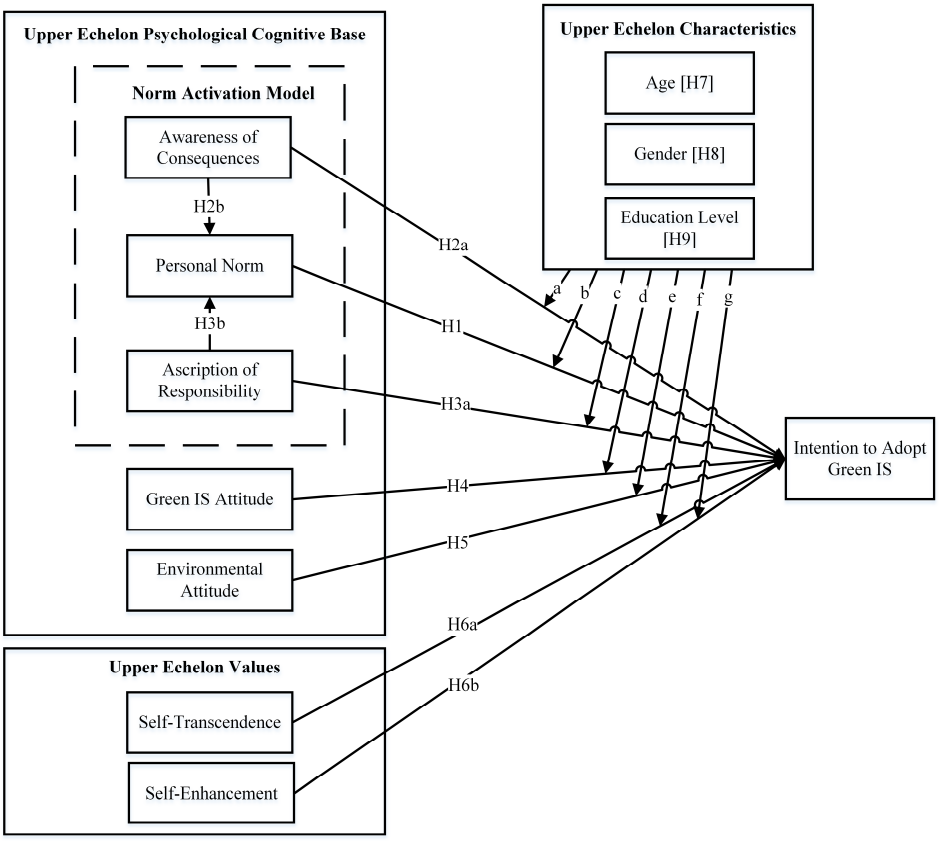

Figure 2: Research Model

behavior of individuals is assessed in terms of right or wrong. Across studies in various contexts, it has found that personal norms are strongly related to behavioral intention, specifically the behaviors including the moral dimension [51].

In the environmental context, the link between personal norms and engaging in proenvironmental behaviors in society has been found in several studies. For example, it has found that there is a link between personal norms and general PEBs [e.g., 52], and specific environmental behaviors such as conservation [e.g., 53], recycling [e.g., 54], littering [e.g., 55], green commuting [e.g., 56], and green purchasing [e.g., 57].

In contrast to the NAM, which assumes the behavior is directly predicted by personal norms, various studies shown that the influence of personal norms on behavior is likely to be mediated by intention towards the behavior if the intention is added to the model [58]. It is also already showed that personal norms towards taking an action is the most important predictor of intention and behavior to act pro-socially and pro-environmentally [47], likewise the study by De Groot and Steg [59] regarding the adoption of nuclear energy technologies showed that the intention and behavior is strongly influenced by personal norms. In studies on adoption of alternative fuel vehicles (AFV) [60], it has shown that the adopter of these eco-innovations exhibit significantly higher level of personal norms than non-adopter. Furthermore, Huijts, et al. [47] asserted that personal norms is the most important predictor of intention to act pro-socially and pro-environmentally. Thus, regarding the adoption of Green IS we propose that the managers' personal norm has a direct impact on their intention towards adopting Green IS. Therefore, we posit:

Proposition 1: Managers with higher level of personal norms will be more likely intend to adopt Green IS.

4.2. Awareness of Consequences

Based on NAM, awareness of consequences (AC) refers to the individual's beliefs regarding the adverse consequences of one's action towards environmental problems. Empirical studies showed

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that the individuals with beliefs that environmental conditions threaten the things they value are more eager to act proenvironmentally. For example, in the study by Eriksson, et al. [1] they have reported that the willingness to car use is less in the individuals with higher awareness of the adverse consequences of using personal car for commuting. Furthermore, in the literature it has found that awareness of adverse consequences is positively related to proenvironmental behaviors. Nordlund and Garvill [61] asserted that problem awareness (i.e. awareness of consequences) "should activate a personal norm or a perceived moral obligation to act in order to protect environment". If individuals are aware of the adverse consequences of the environmental conditions, they are more likely to develop moral obligation to behave proenvironmentally.

In the study by Jansson, et al. [62] regarding the adoption and curtailment of eco-innovation, they have reported the positive and significant influence of individuals' awareness of consequences on their personal norms to behave proenvironmentally. In line with the context of Green IS adoption, we can suggest that the more the managers are aware of the adverse consequences of the environmental conditions the more they are obliged to behave proenvironmentally and the more they are inclined to adopt Green IS. Hence, we surmise that:

Proposition 2: The managers' awareness of adverse consequences of the environmental conditions positively influence their (a) intention to adopt Green IS, and (b) personal norm.

Combining hypotheses 1, 2a, and 2b, we also conclude that the personal norm of an individual mediates the influence of one's awareness of consequences on the intention to adopt Green IS. So, we also postulate the following hypothesis:

Proposition 2c: Personal norms mediate the effect of managers' awareness of consequences on their intention to adopt Green IS.

4.3. Ascription of Responsibility

Another factor which may influence proenvironmental behaviors is ascription of responsibility, which based on Steg and Groot [63] reflects "the feelings of responsibility for the negative consequences of not acting" proenvironmentally.

In the study by Zhang, et al. [38] they have reported that once the employees develop ascription of responsibility regarding their electricity use, they are more likely to develop a moral obligation of saving electricity in the company and behaving proenvironmentally. The positive impact of the ascription of responsibility on the personal norms has already been proven in empirical studies on pro-social and proenvironmental behaviors and actions such as the adoption of energy technologies [47], eco-innovation adoption [60], willingness to pay for park conservation [64], and conservation behavior [65]. Hence, in line with the NAM, and following the empirical studies we expect that once the managers ascribe the responsibility to act to reduce the environmental threats they are more intend to adopt Green IS and also more obliged to behave proenvironmentally. Thus, we postulate that:

Proposition 3: The managers' ascription of responsibility positively influences their (a) intention to adopt Green IS, and (b) personal norm.

Combining hypotheses 1, 3a, and 3b, we also conclude that the personal norm of an individual mediates the influence of one's ascription of responsibility on the intention to adopt Green IS. So, we also postulate the following hypothesis:

Proposition 3c: Personal norms mediate the effect of managers' ascription of responsibility on their intention to adopt Green IS.

4.4. Green IS Attitude

Attitude is referred to as the degree to which an individual assesses a behavior as favorable or unfavorable [44]. Based on Gholami, et al. [28] the attitude is an affective characteristic of organization's decision makers which measures to what extent they are aware of and interested in Green IS. The organizations' decision maker (i.e. senior managers) play an important role in conveying the strategic importance of Green IS across the organization and in making resource allocations [28]. To be particular, the positive attitude of organizations' decision makers is necessary for Green IS to be adopted successfully [28, 66]. Following the previous studies which found that attitude is a strong predictor of intention to adopt information technologies [e.g., 67, 68] and Green IS use [51, 69-71], we state that:

Proposition 4: Managers' Green IS attitudes will positively influence their intention to adopt Green IS initiatives.

4.5. Environmental Attitude

General Environmental attitudes refer to general beliefs on the relationships between humans and the environment. Stern [72] postulated that, individuals' with positive general environmental

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attitudes "may significantly affect the environment through other behaviors, such as influencing the actions of organizations to which they belong". General environmental attitudes would motivate these individuals to engage in proenvironmental behaviors, especially when environmental decisions involve tradeoffs among cost, benefits, risks and social causations [73]. Prior empirical studies reported the positive influence of managers' general environmental attitudes on their intention towards proenvironmental and ethical behaviors [74], their decision to practice specific environmental initiatives [75], as well as engaging in corporate social responsiveness [76]. Following the above discussion, we surmise that the general environmental attitude of managers will influence their intention to adopt Green IS. Hence, we hypothesize that:

Proposition 5: The more deeply rooted managers' general environmental attitudes, the higher the level of their intention to adopt Green IS.

4.6. Personal Values

Bansal and Roth [77] in their article suggest that managers' personal values influence their discretion to behave proenvironmentally because (a) values aid managers to differentiate important and unimportant signals, (b) values may encourage organizational members and specifically decision-makers to champion ecological responses, and (c) managers are more likely to change the way their firm operates, if that change is in line with their personal values. Grojean, et al. [78], asserted that values have a significant influence on organizational behaviors including organizational ethics.

We expect that different types of values would affect managers' intention to adopt Green IS. Based on work of Schwartz and his colleagues [41] in the structure of values and on the empirical studies [76], we identify two types of value orientations that are expected to explain the variations of intention to adopt Green IS. Self-transcendence values, which emphasize the acceptance of others as equal and concerns the welfare of the individual and the others, are expected to positively influence the managers' intention. Self-enhancement values, which emphasizing pursuing one's own interest and the dominance over others, are expected to negatively influence the managers' intention to practice and adopt Green IS. Therefore, we postulate that:

Proposition 6a: The more the managers' values are self-transcendence, the higher the level of their intention to adopt Green IS.

Proposition 6b: the more the managers' values are self-enhancement, the less the level of their intention to adopt Green IS.

4.7. Moderating Factors

In the IS literature it has already been proven that socio-demographic variables such as age, gender, education level are critical in understanding how individuals make decision regarding the adoption of technologies [79], also in the business ethics literature the importance of these variables on individuals' ethical decision making has already been proven [80]. In the literature it has been identified that people who behave more ethically and are more ecologically responsible are female [81], older [82], and well-educated [83]. Thus, we surmise that the managers' demography such as age, gender, and education level can moderate the relationships between their psychological cognitive factors and personal values, and their intention to adopt Green IS.

4.7.1. Age

A number of researchers investigated the relationship between age and environmental sustainability commitment. Some scholars reported the significant correlation among age and environmentalism [84]. For example in the study by Jain and Kaur [85], they have reported that frugality and conservative lifestyle is associated with older age. Tilikidou [84] reported that people with the age 55-60 years are more tend to engage proenvironmental purchasing behaviors, while the individuals having the age 25-35 showed strong but unstable concern. Abeliotis, et al. [81] suggested that there is a positive link between individuals' age and proenvironmental behavior, as their age increases their engagement in proenvironmental activities like "reduce, reuse, recycle" also increases. In the field of Green IT, Molla, et al. [7] reported that there is a significant correlation between age and proenvironmental IT practicing, and they found that young IT professionals are more towards practicing IT proenvironmentally. Following the discussion above, we posit that:

Proposition 7: The age moderates (a) awareness of consequences-intention path, (b) personal norms-intention path, (c) ascription of responsibility-intention path, (d) Green IS attitude-intention path, (e) environmental attitude-intention path, (f) self-transcendence-intention path, and (g) self-

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enhancement-intention path, stronger for younger managers.

4.7.2. Gender

In the environmental psychology literature mixed results are reported about the relationship between gender and proenvironmental behaviors. For example, in the study by Schultz, et al. [86] they have reported that gender is not predicting the attitude towards the environment. Further, it has reported that there is no difference between males and females regarding committed environmentalism [85], or the opinions regarding the seriousness of climate change or engaging in "reduce, reuse, recycle" activities [81]. However, some researchers reported the significant difference in proenvironmental behaviors because of gender difference. For example in the study by Iyer and Kashyap [87], they have reported that females have "more favorable attitudes towards the environment and recycling and were more likely to engage in environmentally friendly and recycling behaviors" than males. Further, Ngo, et al. [88] reported that females pay more attention to greenhouse gas (GHG) reduction activities than males. "Women are more likely to characterize global climate change as the most important environmental issue than men" [81]. Regarding the proenvironmental IT practices and Green IT behaviors Molla, et al. [7] reported the better behavior of males than females however, in their model there were no difference in path coefficient between males and females. Based on the discussion above, it leads to:

Proposition 8: The gender moderates (a) awareness of consequences-intention path, (b) personal norms-intention path, (c) ascription of responsibility-intention path, (d) Green IS attitude-intention path, (e) environmental attitude-intention path, (f) self-transcendence-intention path, and (g) self-enhancement-intention path, stronger for female managers.

4.7.3. Education Level

The correlation among ethical decision making and the educational level of individuals has been studied in the literature related to business ethics. The results regarding the influence of education level on ethical decision making is mixed which some scholars reported the significant influence of educational level while others argue the insignificant impact of educational level on ethical decision making process. In the literature related to environmental psychology the large amount of studies investigated the influence of education on environmental consciousness. However, the results that are reported are inconclusive. Although, some studies reported the negative correlation between education level and proenvironmental behaviors, most of the scholars reported that there is a significant positive relationship between the individuals' education level and their proenvironmental behaviors [83]. Regarding proenvironmental IT practicing and Green IT behaviors, Molla, et al. [7] reported that the IT professional with undergraduate or below education were tend more towards practicing IT proenvironmentally. Following the discussion above, we posit that:

Proposition 9: The education level (a) awareness of consequences-intention path, (b) personal norms-intention path, (c) ascription of responsibility-intention path, (d) Green IS attitude-intention path, (e) environmental attitude-intention path, (f) self-transcendence-intention path, and (g) self-enhancement-intention path, for well-educated managers.

5. DISCUSSION

Regarding the research and practice contributions, we offer implications for Green IS literature and the organizations who wishing to maintain high levels of environmental responsiveness.

5.1. Implications for Research

The contributions to Green IS literature are three-pronged. First, it represents one of the first studies focusing on the influence of personal values, norms, and attitudinal factors on the behavior of individual decision makers towards the adoption of Green IS. We made an original contribution in defining a model for Green IS adoption. The heightened importance of corporate ecological responsiveness has generated a body of research on the adoption of Green IS initiatives. However, the proenvironmental behaviors of organizations' decision makers have been a missing piece of adoption puzzle. Second, this study extends the existing research on the decision-making process of managers to adopt Green IS. Prior studies within this area have investigated the influence of some factors on practicing Green IS initiatives [28]. However, these studies examined the adoption of Green IS from the perspective of factors arise from the cost-benefit tradeoffs [2], and they are largely silent about the influence of personal values, beliefs and norms on the decision-making process. This study provided a theoretically grounded lens through which to better understand the activators of managers' moral behavior to integrate Green IS in their organizational business processes. Finally, by addressing the aforementioned research gap, this

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study serves as a call to the IS literature to incorporate values, beliefs, and norms into their model of individual level decision-making toward contemporary innovation adoption. By enriching our understanding of the influence of values and attitudinal factors on the decision-making process, the model sheds light on how managers would intend to diffuse IS initiatives in their organizations for the purpose of environmental sustainability.

5.2. Implications for Practice

This study also provides practical implications for organizations wishing to develop or maintain high levels of ecological responsiveness. The significance of the influence of personal values, beliefs, and attitudinal factors on the ethical-decision making suggest that considerable attention should be given to the personality of top managers with environmental sustain abilities. Corporations aiming at enhancing environmental sustainability would achieve better outcomes if they screen candidates for environmental management positions on the basis of their proenvironmental behaviors and beliefs. Furthermore, organizations should support more the initiatives focusing on increasing the environmental awareness of managers. The seminars with the area of environmental sustainability and ecological events are the two example of that end. Also, this study brings to the attention of organization managers the separate roles that IS can play to pursuit ecological sustainability in organizations and their processes. This differentiation helps organizations to find the right position for IS in their green business strategies.

As Trevino [13] postulated that “most managers will look outside themselves for cues about what is right (appropriate) behavior and what is wrong (inappropriate) behavior”, the findings of this study would interest managers as they intend to promote environmentally and ethically sound decision making.

Finally, by integrating the individual factors, and issues into organizational ethics and environmental behavior models, researchers may begin to understand the process of judgments and decision-makings of our society’s most influential decision-makers – the individuals who through their daily work decisions within the organizations, contribute to the sustainability of the natural environment.

6. CONCLUSION

In light of the growing concern of Green IS as a strategic approach augmenting business processes to enhance their environmental sustainability, we highlighted the importance of environmental beliefs and norms on the decision-making process of mangers to practice these Green initiatives. More specifically, utilizing the upper echelon theory we have investigated how personal values, psychological cognitive base, and demography characteristics influence the proenvironmental behavioral intention of managers to adopt Green IS. To the best of our knowledge, the proposed model is the first attempt to synthesize theoretical underpinning to investigate the individual-level adoption of Green IS by considering ethical and moral behavior of organizational decision-makers. This study made an original contribution by developing the research model and the factors that constitute it. We hope that the study proposes the general theoretical framework which sets the stage for future research on Green IS and triggers research for further research in this emerging IS paradigm.

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