

4-4-2022

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Recommended Citation

Khan, A., & Krishnan, S. (2022). Ethical Behavior of Firms and B2C E-commerce Diffusion: Exploring the Mediating Roles of Customer Orientation and Innovation Capacity. *Communications of the Association for Information Systems*, 50, pp-pp. <https://doi.org/10.17705/1CAIS.05006>

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Ethical Behavior of Firms and B2C E-commerce Diffusion: Exploring the Mediating Roles of Customer Orientation and Innovation Capacity

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Abstract:

Despite the increasing significance of IT innovations and corporate ethics, we lack research that has investigated whether and how the extent to which firms in a country behave in an ethical manner relates to the rate at which B2C e-commerce diffuses among them. Drawing on the ethical climate theory, the stakeholder theory, and the resource-based view of the firm, we posit that firms' ethical behavior positively relates to B2C e-commerce diffusion and that their customer orientation and innovation capacity will mediate the relationship. We validated our research model using publicly available archival data from 128 countries. Our findings suggest that 1) ethical conduct leads to higher B2C e-commerce diffusion among a country's firms, and 2) customer orientation and innovation capacity serve as the underlying mechanisms that explain this relationship. We discuss crucial implications for research and practice.

Keywords: B2C E-commerce, Ethical Behavior, Ethical Climate Theory, Stakeholder Theory, Resource-based View, Serial Mediation.

This manuscript underwent peer review. It was received 07/03/2020 and was with the authors for ten months for one revision. Indranil Bose served as Associate Editor.

1 Introduction

The potential for information technology (IT) to transform business models, organizational structures, and strategic solutions (Hinings et al., 2018) and to establish an interactive ecosystem among suppliers, customers, and business partners has led various IT innovations, such as such as electronic commerce (e-commerce), to diffuse throughout the world (Hong & Zhu, 2006). E-commerce allows firms to conduct commercial transactions with their business partners and buyers over the Internet and encompasses the process of buying, selling, and exchanging products or services electronically (Turban, Whiteside, King, & Outland, 2017). Motivated by a trend to use online platforms for business transformation, many studies shifted their interest to e-commerce and analyzed several phenomena surrounding it. Among them, corporate ethics has emerged as an intriguing subject against the backdrop of B2C e-commerce, which refers to retail transactions from businesses to individual customers (Turban et al., 2017). However, the literature that links B2C e-commerce and corporate ethics exhibits bias toward acknowledging the impact that e-commerce ethics (i.e., ethical issues concerning e-commerce) can have on buyers' repurchase intention and loyalty (Agag, 2019). That is, most past research that has dealt with e-commerce and corporate ethics has covered moral issues such as e-commerce access (digital divide), privacy and security concerns, reliability, and trust (Kracher & Corritore, 2004; Payne et al., 2015; Thatcher, Carter, Li, & Rong, 2012; Turban et al., 2017), which, in turn, influence customers' intention to use B2C e-commerce at their end (Cao et al., 2005). Nevertheless, we know relatively little about the link between corporate ethics and B2C e-commerce diffusion among firms, which we define as the extent to which B2C e-commerce use spreads through firms in a country (Khan et al., 2020). In essence, the literature on e-commerce ethics has primarily focused on the demand side of e-commerce and not sufficiently explored the supply side.

To deal with this void in the literature, we focus on the ethical behavior of firms, which we define as the degree to which firms engage in ethical conduct while interacting with the government (i.e., public officials and politicians) and other firms (i.e., business partners, vendors, suppliers, and competitors of the focal firms) (World Economic Forum, 2017a). We posit that IT innovation (Jha & Bose, 2016) and ethical behavior (Chun et al., 2013; Holzer & Junglas, 2013) have become central issues that many firms consider to grow. The occurrence of unethical behavior in businesses has raised concerns about ethics in general and corporate ethics in particular (De Cremer et al., 2011). In fact, many scandals in various firms such as American International Group (AIG), Enron, Tyco, and WorldCom have raised awareness about unethical and irresponsible practices in firms and their negative consequences, such as a decrease in stock value, reputation loss, and a decline in inter-firm relationships (De Cremer et al., 2011; Sullivan et al., 2007). Researchers, policy makers, and practitioners have increasingly focused on ethical issues and proposed that one needs to consider corporate ethics to describe a firm's position in ethical situations (Sims, 1991; Valentine & Barnett, 2002). Many studies consider corporate ethics to have positive implications for firms' performance, especially financial performance (Chun et al., 2013), brand performance (Wang et al., 2015), and customer satisfaction (Lamond, Dwyer, Arendt, & Brettel, 2010). Researchers have also conceived ethical considerations to affect organizational success and innovation (Culnan & Williams, 2009; Stahl, 2012). Thus, we can reasonably assume that the extent to which firms in a country behave in an ethical manner will shape the rate at which a critical IT innovation, B2C e-commerce, diffuses among them.

A country evidently benefits enormously from a higher B2C e-commerce diffusion rate as it offers several advantages not only to the firms themselves but also to end consumers. To elaborate, for firms, B2C e-commerce enables them to lower transaction costs and appropriately target and serve the market segments more cheaply than through conventional physical channels (Sharma & Sheth, 2004; Sheth & Sharma, 2005). For customers, B2C e-commerce offers greater convenience, flexibility, and efficiency in carrying out purchase activities (Alba et al., 1997; Bhatnagar et al., 2000; Turban et al., 2017; Van Slyke et al., 2010). And, for a country, it enables rural development, boosts productivity, promotes economic development, and increases the scope for entrepreneurship and employment (Sirimanne, 2017; United Nations, 2017). Despite such potential benefits, e-commerce businesses appear to have a prominent failure rate: Clominson (2019) noted that more than 80 percent of startups have failed to continue their businesses over e-commerce platforms since 2016. Concerns about online shopping cart abandonment have also intensified given that cart abandonment rate rose from approximately 59 in 2006 to 69 percent in 2017 (Osman, 2021). While B2C e-commerce has grown significantly and been successful for firms in certain countries (e.g., China, Denmark, and Japan), in others (e.g., Algeria, Bangladesh, and Lesotho), firms struggle to hold a reasonable share in the B2C e-commerce marketplace. We posit that we can

attribute this lag in attaining a higher level of B2C e-commerce diffusion in a country to its firms' ethical behavior. An ethical orientation enables firms in a country to value their customers, understand customer needs, and perform product and process innovations, which lead firms to increasingly use B2C e-commerce. However, the literature has not sufficiently theoretically examined or found empirical evidence for whether and how corporate ethics in a country could shape the B2C e-commerce diffusion among its firms. We consider this research gap in this paper. More specifically, we examine the following research question:

RQ1: Does the ethical behavior of firms in a country shape the diffusion of B2C e-commerce among them?

As this question indicates, we investigate the phenomenon at the macro level (i.e., cross-country) in line with prior studies (e.g., Khan et al., 2020; Srivastava & Teo, 2010). We do so primarily due to the variability in firms' ethical behavior and in B2C e-commerce diffusion across countries. Most global studies indicate that firms' corporate ethics and B2C e-commerce diffusion vary significantly across countries (World Economic Forum, 2016a, 2016b). For instance, firms in Finland and New Zealand score much higher than firms in Mauritania and Venezuela in terms of ethical behavior (World Economic Forum, 2016a). Similarly, firms in the United Kingdom and the United States perform better than firms in Burundi and Ethiopia in terms of B2C e-commerce use (World Economic Forum, 2016b). In a global study, the United Nations has also acknowledged such an observation in reporting that B2C e-commerce sales vary considerably across countries and that countries vary significantly in their readiness to take part in the digital economy (United Nations, 2017). Thus, we need to understand the relationship between firms' ethical behavior and B2C e-commerce diffusion at the cross-country level for two key reasons. First, many studies have attempted to explain B2C e-commerce diffusion at the micro (i.e., firm) level (e.g., Hong & Zhu, 2006; Kraemer et al., 2005; Rowe et al., 2012) but not explained its global dynamics. Thus, we focus on providing insights to policy makers and practitioners toward that direction. Second, e-commerce studies that have attempted to explain B2C e-commerce diffusion at the industry, market, or nation level (e.g., Ahmad et al., 2015; Ferguson & Yen, 2006; Oliveira & Dhillon, 2015) have largely ignored the effects of corporate ethics. Besides, most studies in this category have focused only on a particular nation or a select few countries (e.g., Ahmad et al., 2015; Ho et al., 2007; Rowe et al., 2012), which leaves scope for gathering empirical evidence from large-scale cross-country studies. Thus, we can see that we lack research that has examined the relationship between firms' ethical behavior and the B2C e-commerce diffusion at the cross-country level. In this study, we take an initial step toward addressing this gap via theoretical explanation and empirical exploration.

To explain the proposed relationship, we draw on ethical climate theory (Victor & Cullen, 1988), which identifies several ethical climate types (see Section 2) that govern organizational behaviors (Cullen et al., 2003). In particular, we contend that the extent to which firms in a country behave in an ethical manner will shape the rate at which B2C e-commerce diffuses among them in an ethical climate that laws and professional codes govern. Further, to more deeply examine our research question, we focus on uncovering the underlying mechanisms that explain this relationship. In theory, ethical firms care about their customers and wish to build customer relations by helping them meet their needs. For example, Thrivent Financial, a Fortune 500 not-for-profit financial services organization and one of the world's most ethical companies, has become well known for deeply caring for its customers' needs (Morgan, 2019). Customer-oriented firms do not only offer a good product—they also disrupt their industries, innovate, and embrace digital transformation to provide better customer solutions (Morgan, 2019). Accordingly, we draw on the stakeholder theory (Freeman, 1984) and the resource-based view (RBV) of the firm (Barney, 1991) and propose that firms' 1) customer orientation and 2) innovation capacity as key mediating factors to more richly theoretically explain the relationship between firms' ethical behavior and B2C e-commerce diffusion. While customer orientation refers to the extent to which firms respond to customers' needs and preferences and satisfy them (Howe et al., 1994), innovation capacity implies the extent to which firms have technological abilities (i.e., knowledge, expertise, and tools) to innovate. Since we examine the theoretical linkages between firms' ethical behavior and B2C e-commerce diffusion to advance the research stream on corporate ethics and e-commerce, exploring customer orientation and innovation capacity as intervening factors will be crucial. Therefore, we address a second research question:

RQ2: What roles do customer orientation and innovation capacity play in influencing the relationship between ethical behavior of firms in a country and B2C e-commerce diffusion among them?

To address this question, we submit that customer-oriented firms in a country are more likely than non-customer-oriented firms to improve their innovation capacity (Wang, Zhao, & Voss, 2016). In other words, we can reasonably argue that customer orientation influences innovation capacity, which, in turn, drives B2C e-commerce diffusion among firms. Accordingly, we expect that customer orientation and innovation capacity will “serially” mediate (Hayes, 2018, p. 149) the relationship between firms’ ethical behavior and B2C e-commerce diffusion at the cross-country level. We used publicly available archival data about 128 countries to test the proposed relationships and found strong support for our hypotheses. Thus, with this study, we make several key contributions to the e-commerce and corporate ethics domains. First, we provide empirical evidence on the direct relationship between firms’ ethical behavior and B2C e-commerce diffusion and show that the significant variation in the B2C e-commerce diffusion level among firms across countries was explained by the variation in firms’ ethical conduct, which implies that the rate at which B2C e-commerce innovations diffuse in countries depends on its firms’ ethical conduct. Second, by identifying customer orientation and innovation capacity as the underlying mechanisms that explain the relationship between corporate ethics and B2C e-commerce diffusion, our study provides important theoretical and managerial insights into a potential yet underinvestigated phenomenon.

This paper proceeds as follows: in Section 2, we explain the theoretical background and develop the conceptual framework and hypotheses. In Section 3, we discuss our research design. In Section 4, we present our findings. In Section 5, we discuss the additional data analyses we conducted to ensure our results’ robustness. In Section 6, we discuss our findings’ implications for research, policy, and practice and highlight possible future research directions. Finally, in Section 6, we conclude the paper.

2 Theory and Hypotheses

To address our two research questions, we logically deduced hypotheses by drawing on three theories: 1) ethical climate theory (Victor & Cullen, 1988), 2) stakeholder theory (Freeman, 1984), and 3) the RBV of the firm (Barney, 1991). Our conceptual framework (see Figure 1), which we grounded in these three theories, shows the linkages (L) between the key study variables—firms’ ethical behavior, customer orientation, innovation capacity, and B2C e-commerce diffusion—which led to the predictions behind our hypotheses. While H1, which builds on L1, explains the direct relationship between firms’ ethical behavior and B2C e-commerce diffusion in a country, H2 (based on L2 and L3) and H3 (based on L4 and L5) explicate how firms’ customer orientation and innovation capacity mediate this relationship, respectively. Finally, H4, which builds on L2, L3, L6, and L5, discusses the serial mediation by these two mediating variables. Throughout this section, we discuss how we developed our hypotheses in more detail.

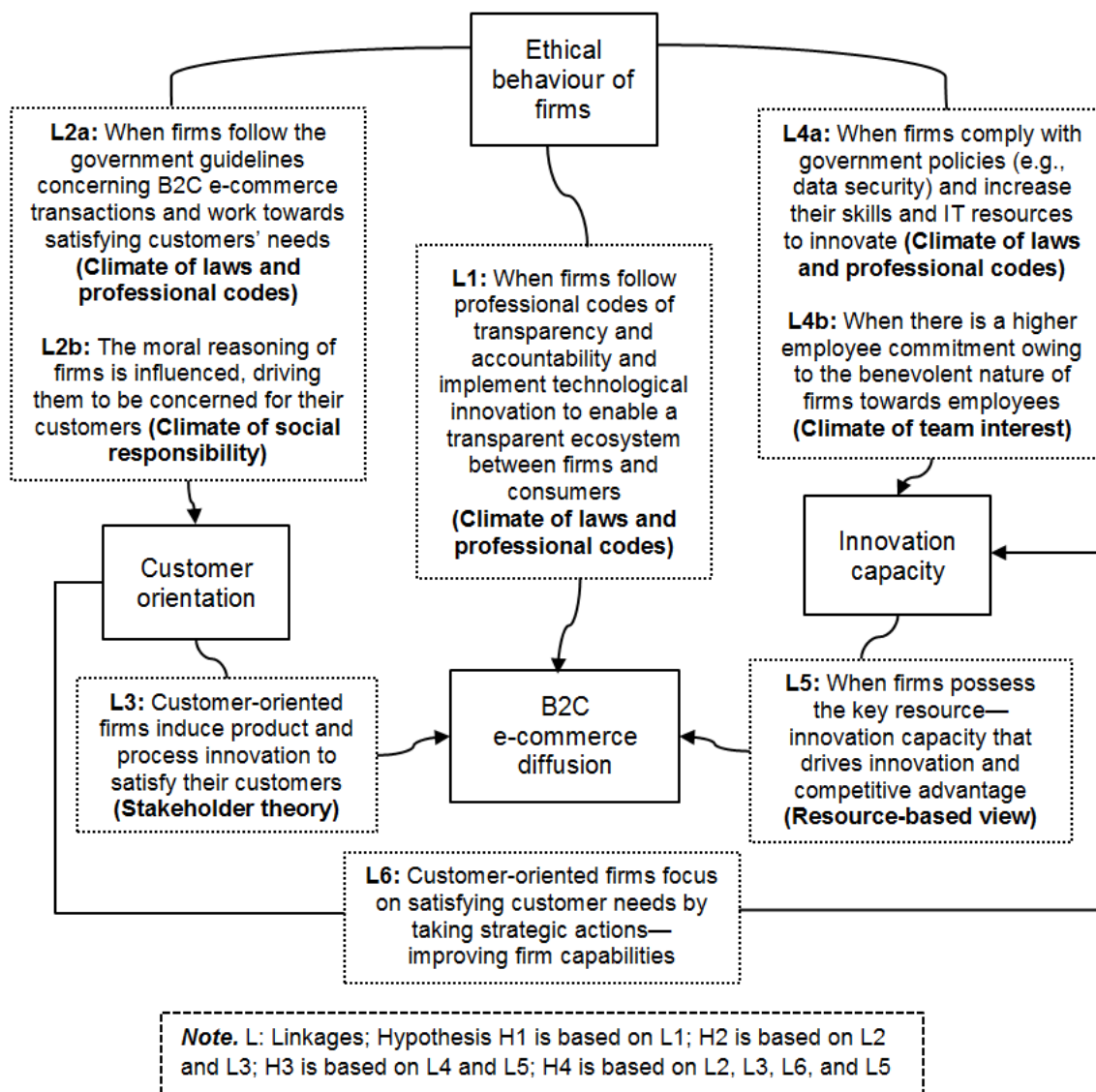


Figure 1. Conceptual Framework

2.1 Relating Firms’ Ethical Behavior to B2C E-commerce Diffusion

We draw on ethical climate theory, which Victor and Cullen (1988) first proposed, to understand the relationship between firms’ ethical behavior and B2C e-commerce diffusion. Researchers acknowledge this theory as one of the most influential theoretical frameworks in the business ethics domain, and it has inspired several research streams in several disciplines, such as organizational behavior, psychology, and sociology (Martin & Cullen, 2006). The ethical climate refers to “a group of prescriptive climates reflecting the organizational procedures, policies, and practices with moral consequences” (Martin & Cullen, 2006, p. 177). Such climates are developed when organizational members believe that certain forms of ethical behavior are expected norms in the organization (Cullen et al., 2003). Essentially, ethical climate encompasses one’s perception about what constitutes correct behavior, and it shapes organizational behavior, usually in response to ethical dilemmas (Martin & Cullen, 2006). Given that we focus on B2C e-commerce diffusion in terms of the degree to which firms use B2C e-commerce, which reflects the organizational behavior notion, one can logically presume that ethical climate will play a critical role in influencing this behavior. Furthermore, note that the marketing literature uses the ethical climate concept to study customer relationships (e.g., Kennedy, Ferrell, & LeClair, 2001) and explain organizational innovation performance (e.g., Ruppel & Harrington, 2000)—settings that relate closely to our B2C e-

commerce study context. Hence, we believe that it will be exciting and worthwhile to understand firms' ethical behavior and B2C e-commerce diffusion through the ethical climate lens.

Victor and Cullen's (1988) ethical climate framework constitutes a two-dimensional model that represents a theoretical typology of ethical climates grounded in ethical philosophy and sociological theory. While the first dimension, ethical criterion, refers to "the ethical criteria used for organizational decision making" (Victor & Cullen, 1988, p. 104), the second dimension, locus of analysis, represents "a referent group identifying the source of moral reasoning used for applying ethical criteria to organizational decisions" (Victor & Cullen, 1988, p. 106). Three major classes of ethical theory characterize the first dimension: 1) egoism (acting to maximize one's self-interest), 2) benevolence (considering others' wellbeing), and 3) principle (adhering to rules, law, codes, and procedures). Similarly, three loci of analysis levels characterize the second dimension: 1) individual locus (the ethical reasoning source resides in the individual), 2) local locus (the ethical reasoning source resides in the organization), and 3) cosmopolitan locus (the ethical reasoning source resides in society or a professional body external to the focal organization). The framework further indicates that nine theoretical ethical climate types—1) self-interest, 2) friendship, 3) personal morality, 4) company profit, 5) team interest, 6) company rules and procedure, 7) efficiency, 8) social responsibility, and 9) laws and professional codes—emerge at the point where the theoretical ethical criterion dimensions and locus of analysis intersect. Table 1 briefly describes these nine ethical climate types.

Table 1. A Brief on Theoretical Strata of Ethical Climate (Adapted from Victor & Cullen, 1988)

| Ethical criterion | Locus of analysis | Ethical climate types | Description |
|-------------------|-------------------|------------------------------|--|
| Egoism | Individual | Self-interest | This climate type involves acting in one's own needs and preferences (e.g., personal gain). Individuals protect their interests above all else. |
| Benevolence | | Friendship | This climate type involves considering other people based possibly but not necessarily on organizational membership (e.g., friendship and reciprocity). |
| Principle | | Personal morality | This climate type involves following one's own personal ethics and moral beliefs. |
| Egoism | Local | Company profit | This climate type involves making decisions that serve the organization's interest (e.g., corporate profit and strategic advantage). |
| Benevolence | | Team interest | This climate type involves considering the organizational collective (e.g., team play and cooperation). Organizations that have this ethical climate type care about the wellbeing of their employees and develop practices, strategies, and policies accordingly. |
| Principle | | Company rules and procedures | In this climate, the ethical reasoning source resides in the organization (e.g., rules and procedures). Pervasive local rules or standards likely drive organizational decisions. |
| Egoism | Cosmopolitan | Efficiency | This climate type involves considering the larger social or economic system's interests. In this case, firms may want to control costs and expect that members will work efficiently. |
| Benevolence | | Social responsibility | This climate type involves considering constituencies beyond the firm itself. Firms that have this ethical climate type care for customers and public and do what suits people. |
| Principle | | Laws and professional codes | In this climate, principles come from extra-organizational sources (e.g., professional organizations). Organizations follow legal or professional standards in decision-making situations. |

To lay the theoretical foundations for logically deducing our hypotheses, we first assess whether the ethical climate types pertain to the B2C e-commerce context. As Table 2 shows, we can see that all nine climate types have relevance in the general B2C e-commerce context (see the second column); however, we found only three climates—the ethical climates of team interest, social responsibility, and laws and professional codes—to have theoretical relevance (see third column) for addressing our RQs. In other words, we focus on three ethical climate types to explain our research model and do not focus on the

others for several reasons. First, we consider self-interest, friendship, and personal morality, which have an individual locus, as not relevant in our study since we investigate the relationship between ethical behavior and B2C e-commerce diffusion at the cross-country level, not at the individual level. As these ethical climates involve individual behavior, they will most apply a context that deals with individuals. Second, we see company profit as less useful in explaining our research phenomenon since it refers to the egoistic decisions and associated behaviors that a firm itself makes; the firm does not create it when engaging in ethical interactions with external stakeholders. Third, we find company rules and procedures as not relevant to our research questions since this climate refers to local rules (or rules in organizations) or standards that guide organizational decisions. This climate does not consider organizational decisions that the ethical interactions with other firms or governments would drive and guide and, thus, deviates from our study context. Finally, fourth, it made less sense to draw on efficiency for our hypotheses because this conception primarily indicates the work efficiency that an organization expects from every organizational member, which may not substantially explain B2C e-commerce diffusion that relates more to attaining transactional efficiency from the firm perspective. We can see that, taken together, these six ethical climate types lack applicability to our study given that we focus on understanding the relationship between ethical behavior and B2C e-commerce diffusion at the cross-country level. In contrast, team interest, social responsibility, and laws and professional codes align more with an investigation into firms' ethical behavior and B2C e-commerce diffusion, which makes them relevant to our study.

Table 2. Assessing the Relevance and Applicability of Ethical Climate Types

| Ethical climate types | Relevance in B2C E-commerce context (Illustrative accounts) | Applicability in our study context |
|-----------------------------|---|------------------------------------|
| Self-interest | These climate types may explain whether an individual employee works responsibly or seeks self-interest, which, in turn, would impact the work output (e.g., the quality of e-commerce websites) and firm performance (e.g., the success of B2C e-commerce). | Not applicable |
| Friendship | | |
| Personal morality | | |
| Company profit | This climate could explain that firms consider investing in B2C e-commerce because it may increase company profit by bringing transaction costs down and provide a strategic advantage by enabling them to tap into customer needs. | Not applicable |
| Team interest | This climate characterizes how benevolently companies treat their employees. It drives employees to believe that their firms care about and for them. Thus, this climate conduces to employee commitment, creates positive feelings about organizational tasks, and may foster firms' innovation capacity and, thereby, influence B2C e-commerce diffusion. | Applicable |
| Company rules and procedure | Organizational rules and standards such as the company policies on grievance resolutions (for customers, employees, and partner firms) may guide B2C e-commerce decisions and behaviors. | Not applicable |
| Efficiency | A firm expects every employee to work efficiently to control costs. Their work efficiency can shape customers' online purchase intention and benefit B2C e-commerce firms in drawing and retaining customers. | Not applicable |
| Social responsibility | Ethical firms may value customer interests and understand customer needs. A customer-centric attitude then drives firms to innovate (B2C e-commerce innovation). | Applicable |
| Laws and professional codes | Certain laws (e.g., IT laws) and professional codes of conduct likely govern the decisions that firms in a country make and their behavior, which could influence B2C e-commerce diffusion among firms. | Applicable |

As we state in Section 1, we conceive firms' ethical behavior as involving their interactions with 1) the government and 2) other firms. Such interactions indicate a cosmopolitan locus of the ethical climate since researchers have found cosmopolitan sources of ethical reasoning and behavior to be created outside organizations but used inside them (Victor & Cullen, 1988). The ethical climate of laws and professional codes, at the intersection of the cosmopolitan locus and principle dimensions, is based on the perception that external codes could influence firms' decision-making and actions (Martin & Cullen, 2006). Therefore, in a country, the level of B2C e-commerce diffusion among firms will likely rise when they engage in ethical conduct with the government and follow certain laws and professional codes of conduct. To elaborate, when firms in a country share ethical relationships with the government, we can reasonably

expect that external codes such as laws and regulations would determine organizational behavior. In their study, Khan and Krishnan (2019) acknowledge that the overall sophistication of IT laws in a country highly correlates with firms' use of IT innovations. Further, the Trade and Development Board of United Nations has suggested that B2C e-commerce innovation in a country requires a sophisticated legal environment and firms that follow regulations and rules (United Nations, 2015). When firms in a country act ethically and follow government regulations regarding online transactions, data security, and consumer protection, consumers' confidence in e-commerce will likely grow. Consequently, there will be an increase in sales and revenues for the firms, and their increased cash flow would encourage them to invest more in IT innovations and, thus, encourage them to continuously use B2C e-commerce. Since continuous usage rather than adoption defines B2C e-commerce diffusion, we can expect higher diffusion levels in a country whose firms continue using B2C e-commerce. Thus, we contend that, when firms in a country engage in ethical conduct in interactions with the government, external codes such as laws and regulations will influence the extent to which B2C e-commerce diffuses among them.

Note that external codes could also play a major role when firms demonstrate ethical behavior in interactions with other firms. The cosmopolitan locus of ethical climate theory indicates that ethical reasoning can come from a professional association (Victor & Cullen, 1988). In such a case, professional codes of transparency and accountability would drive B2C e-commerce diffusion in a country. That is, ethical firms would follow the codes of transparency and accountability and implement technological innovation to enable a transparent ecosystem between firms and consumers. Taken together, in a country where firms engage in ethical behavior when interacting with the government and other firms, we can expect a higher B2C e-commerce diffusion level among them (as we specify in L1 in Figure 1). Accordingly, we hypothesize:

H1: The ethical behavior of firms in a country is positively associated with B2C e-commerce diffusion among them.

2.2 The Mediating Role of Customer Orientation

Customer orientation refers to sufficiently understanding "one's target buyers to be able to create superior value for them continuously" (Narver & Slater, 1990, p. 21). In practice, firms' customer orientation involves their willingness to 1) help customers make good buying decisions, 2) respond to future and current customers' needs and preferences, and 3) satisfy them (Howe et al., 1994; Kohli & Jaworski, 1990). This view concurs with stakeholder theory, which suggests that various stakeholders' interests and demands should take priority while firms strive for economic gains (Freeman, 1984). Specifically, in a B2C e-commerce context, customers represent the utmost concern since firms have direct relationships with customers (Turban et al., 2017) and their revenue principally comes from customers (Holzer & Junglas, 2013). Accordingly, we draw on the stakeholder theory to underscore the mediating role that customer orientation plays in the relationship between firms' ethical behavior and B2C e-commerce diffusion.

Researchers have developed the stakeholder concept in various ways. Since Freeman (1984) first proposed it, research in the business ethics domain has increasingly focused on stakeholder management that refers to an obligation to serve all stakeholder interests (Arnold et al., 2013; Payne et al., 2015). Freeman (1984) described stakeholders as those individuals or groups who can influence or are influenced by a firm's activities. As Donaldson and Preston (1995) have argued, three broad research streams involve stakeholder theory's core tenets: 1) descriptive (i.e., how does a firm associate with its stakeholders?), 2) normative (i.e., how should a firm associate with its stakeholders?), and 3) instrumental (i.e., what are the organizational outcomes when a firm associates with its stakeholders?) (Jiang et al., 2020). In this paper, we draw on the instrumental view according to which a firm essentially constitutes a nexus of relationships between itself and its stakeholders and relies on these relationships to increase its performance (Jones et al., 2018). Ethical norms such as commitment bonds (Bosse & Coughlan, 2016), trustworthiness (Barnett & Salomon, 2012), and communal sharing (Jones et al., 2018) drive how firms develop stakeholder relationships, and these relationships make them effective in understanding the stakeholder concerns and requirements (Li et al., 2018) and act accordingly (Jiang et al., 2020).

Drawing on stakeholder theory, we derive two explanations regarding the role that customer orientation plays in influencing B2C e-commerce diffusion among firms in a country. First, customer-oriented firms seek to satisfy their customers and retain them (Kohli & Jaworski, 1990) and tend to develop novel products and services (Wang et al., 2013). Therefore, as L3 in Figure 1 indicates, we expect that customer-oriented firms in a country use B2C e-commerce to benefit their customers and strengthen the relationships with them. Second, organizations today increasingly consider customers or end users as a

salient source of product and service innovations as they can directly share ideas and information regarding their requirements (Kankanhalli et al., 2015). Thus, customer orientedness may enable firms in a country to engage with their customers to access critical resources and valuable information that innovation requires (Jiang et al., 2020). For instance, customers may demand innovation in product delivery such as to track deliverables online (Koellinger, 2008), which would motivate customer-oriented firms to better use B2C e-commerce for providing improved customer service. Similarly, customers, especially in developing countries, may express their difficulties in making payment online; a customer-oriented firm would then enable, for example, a cash-on-delivery feature in their B2C e-commerce platforms to help their customers. Therefore, when firms in a country respond highly to their customers, we can expect that the information that their customers share would drive the firms to use B2C e-commerce to a greater degree (Harrison et al., 2010).

Ethical firms generally care about their customers' welfare. Prior research suggests that firms that engage in ethical behavior are more likely to act in a customer-oriented manner and customers are more likely to trust them (Howe et al., 1994; Lagace et al., 1991; Saxe & Weitz, 1982). We provide two key explanations to support this relationship. First, we draw on the laws and professional codes ethical climate to contend that, when firms engage in ethical interactions with the government, various government guidelines govern their behavior, such as 1) pricing formulae that reduce the likelihood that they will engage monopolistic and predatory practices, 2) data security policies (e.g., payment card industry data security standard (PCIDSS)) that protect customer transactional data, and 3) refund policies that clarify refund opportunities, which lead to greater customer satisfaction among other things. Ethical firms adhere to these government guidelines about B2C e-commerce transactions and work towards satisfying their customers' needs (e.g., need for privacy). In sum, as L2 in Figure 1 indicates, when firms in a country have ethical interactions with the government, they will comply with the government guidelines that drive them to act in a more customer-oriented manner.

Second, we submit that ethical firms behave act in a benevolent way that considers customers' wellbeing as the social responsibility ethical climate indicates (Victor & Cullen, 1988). Thus, we can expect ethical interactions with other customer-oriented firms to influence a local firm in a country to act in a more customer-oriented manner. When a local firm interacts ethically with other firms, their interactions act as the cosmopolitan source for the former's moral reasoning. The local firm then behaves similar to the other firms with whom it interacts. Thus, when a firm's business partners and competitors in a country act in a benevolent way toward their customers, the firm also takes an interest in its customers. In other words, as L2b in Figure 1 shows, ethical behavior in interactions with other firms would influence a local firm's moral reasoning and drive it to act in a more customer-oriented manner. Since acting in a customer-oriented manner helps firms to enhance their innovativeness and competitive advantage (Adams et al., 1998; Grinstein, 2008), we contend that ethically oriented firms in a country will tend to act in this way and, accordingly, that they will be more likely to use B2C e-commerce to benefit customers and themselves. Thus, we hypothesize:

H2: Customer orientation mediates the relationship between the ethical behavior of firms in a country and B2C e-commerce diffusion among them.

2.3 The Mediating Role of Innovation Capacity

Innovation capacity encompasses a firm's technological abilities—expertise, accumulated knowledge, and tools—that enable it to innovate (Day, 1994). Acknowledging that B2C e-commerce involves a salient technological innovation (Mahadevan, 2004), which firm-specific resources such as technical abilities could drive (Wang et al., 2013, 2016), we draw on the RBV and propose innovation capacity as having a substantial impact on the extent to which firms use B2C e-commerce use. Indeed, without having the capacity to innovate, firms in a country would find it difficult to continue using the Internet to conduct their business dealings. According to the RBV, a firm's internal resources drive its sustainable competitive advantage (Barney, 1991). Thus, the RBV adopts an internally driven view as opposed to an externally driven view according to which a firm's competitive advantage depends on external market forces and its position in the market (Porter, 1985). Firm resources refer to anything that one can consider "a strength or weakness of a given firm" (Wernerfelt, 1984, p. 172), and we can classify them broadly into three categories: 1) physical capital resources (e.g., technology, location, and plant and equipment), 2) organizational capital resources (e.g., formal/informal structure and relationships), 3) human capital resources (e.g., managers and employees) (Barney, 1991). For resources to drive competitive advantage, they must be valuable, rare, imperfectly imitable, and non-substitutable (VRIN) (Barney, 1991).

Researchers have widely used the RBV perspective to understand how organizations can gain product and service innovations and a sustained competitive advantage by building VRIN resources (Barney, 1991; Wang et al., 2016). Drawing on this notion, we conceive innovation capacity as a key and valuable resource since it influences firms in a country to innovate and leads them to attain competitive advantage (Hsieh & Tsai, 2007). Prior studies have viewed a firm's technological capability as one of the most salient sources for sustainable competitive advantage (Barney, 1991; Grant, 1991; Wang et al., 2016). Further, innovation capacity can be rare, non-substitutable, and hard to imitate since it exists internally in firms and firms without similar capacity in terms of their technical skills and knowledge would differ in understanding what improvements they could make to their product or service offerings and how they could do so (Wang et al., 2016). As B2C e-commerce encompasses extensive innovation in using the Internet (and other related technologies) to facilitate business dealings with consumers, innovation capacity, as L5 in Figure 1 indicates, becomes an essential asset for firms to drive this innovation. Thus, we submit that innovation capacity determines the degree to which firms in a country use B2C e-commerce.

Further, we argue that ethical interactions with the government and other firms enhance a firm's innovation capacity. As for ethical interactions with the government, the laws and professional codes ethical climate suggests that ethical firms in a country intend to comply with the government guidelines involving B2C e-commerce and, in doing so, likely increase their skills and IT resources to innovate. To illustrate, when firms act in an ethically oriented manner, they more willingly adhere to government-prescribed data-security policies and will more likely acquire the necessary tools and increase knowledge to enable data security. That is, they will feel more motivated to increase innovation capacity to introduce, say, transactional innovation (e.g., "cash on delivery" payment system mode) in their offerings to reduce the transactional risks. In other words, as the L4a in Figure 1 indicates, ethical interactions with the government act as a significant driver for firms in a country to build innovation capacity since compliance with certain government guidelines about B2C e-commerce calls for substantial innovation. As for ethical interactions with other firms, we posit that they may act as a source for a local firm's moral reasoning. Therefore, due to influence from business partners and/or competitive, we can expect a local firm to focus on innovativeness, employee interest, and organizational commitment. The team interest ethical climate also suggests that ethical firms seek to satisfy employee interests. Employees then perceive their firms to be benevolent (Victor & Cullen, 1988); to endorse company policies, practices, and strategies; and to agree with and support the firm's mission and objectives, which leads them to commit to the organization at higher levels (Martin & Cullen, 2006) as L4b of Figure 1 indicates. In essence, when firms engage in ethical behavior, one can observe higher organizational commitment among their employees, who then will be ready to learn new things, adopt new ideas and technologies, and build their knowledge and skills, which will, in turn, strengthen the firms' innovation capacity (Forsman, 2011). Taken together, we contend that ethical behavior will encourage B2C e-commerce diffusion via enhancing innovation capacity. Thus, we hypothesize:

H3: Innovation capacity mediates the relationship between the ethical behavior of firms in a country and B2C e-commerce diffusion among them.

2.4 The Serial Mediation by Customer Orientation and Innovation Capacity

As we discuss in Section 2.2, customer orientation strongly drives whether firms in a country use B2C e-commerce; and, according to the prior studies (e.g., Wang et al., 2016), it may have an indirect effect on innovation (here, B2C e-commerce) rather than a direct one. That is, being an important strategy, customer orientation, as L6 in Figure 1 shows, could initiate strategic actions that improve a firm's capabilities for designing and developing technological solutions, which, in turn, could influence it to use IT innovations in the form of B2C e-commerce. As such, customer orientation indicates that firms focus on promoting their customers' welfare, which gives rise to product and process innovations. In essence, we propose innovation capacity as the underlying mechanism through which customer orientation influences B2C e-commerce diffusion among firms in a country.

We further submit that firms that engage in ethical conduct are likely to act more in a customer-oriented manner (Howe et al., 1994; Lagace et al., 1991). We expect these firms to respond better to customers' changing requirements and to adopt new technologies to improve their extant products and design new products or services (Wang et al., 2016). In other words, the customer focus encourages firms to realize customers' needs and constraints and provides the necessary direction that they need to determine what to innovate; they can then focus on gathering resources and building innovation capacity to enhance the value for their customers. Taken together, we posit that the extent to which firms in a country act in an

ethical manner largely determines the extent to which they act in a customer-oriented manner and that a greater customer orientation propels firms to increase their innovation capacity to satisfy the customer needs via using B2C e-commerce. Thus, we hypothesize:

H4: Customer orientation and innovation capacity serially mediate the relationship between the ethical behavior of firms in a country and B2C e-commerce diffusion among them.

We diagrammatically represent the research model in Figure 2.

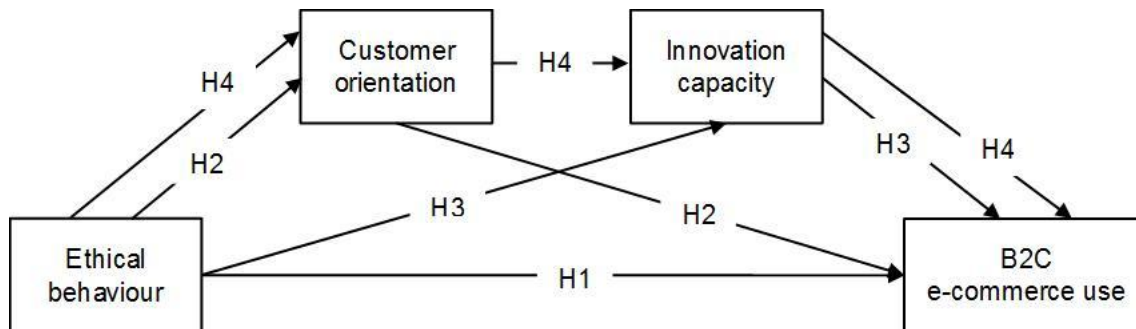


Figure 2. Research Model

3 Research Design

We used archival data to test our hypotheses for two reasons. First, since we conducted a large-scale cross-country study, we faced time and resource constraints in gathering primary data spanning over a hundred countries (Meso et al., 2009). Second, archival data offers several advantages, such as 1) easy reproducibility, 2) the ability to generalize the outcomes from larger datasets (Kiecolt & Nathan, 1985), and 3) robustness to common method bias (Woszczynska & Whitman, 2004). We tested the hypotheses by analyzing publicly available data from 128 countries after omitting the missing values (see Appendix A for the list of the countries). We considered our sample size as adequate given that, as Hair et al. (2006) argues, one requires at least 50 observations to avoid degrees of freedom and efficiency issues. Further, in line with the extant studies that suggest that an independent variable may not have an instantaneous effect (e.g., Das et al., 2017; Robertson & Watson, 2004), we maintained a lag between the independent and the dependent variables and between the independent and the mediating variables. Furthermore, in line with prior studies (e.g., Brouthers et al., 2008; Habib & Zurawicki, 2001) and to address limitations associated with inaccurate and unstable estimates (Krishnan et al., 2017), we prepared the data for analyses by taking a statistical mean of values over two successive years for each variable. Hence, we collected data for the dependent variable for the years 2015 and 2016, the mediating variables for 2014 and 2015, and the independent variable for 2013 and 2014.

3.1 Operationalization of Constructs

3.1.1 Dependent Variable

We considered B2C e-commerce diffusion among firms as the dependent variable in this study. This variable refers to the extent to which firms in a country use information and communication technology (ICT) to transact with consumers, and we measured it using the indicator representing “the extent to which businesses in a country use the Internet for selling their goods and services to consumers”. We anchored this indicator, which prior macro-level studies have also used (e.g., Arayankalam & Krishnan, 2020; Khan et al., 2020; Srivastava & Teo, 2010), on a seven-point Likert scale from “not at all (1) to “to a great extent (7). We obtained the scores for it from the World Economic Forum’s (WEF’s) Global Information Technology Reports (World Economic Forum, 2015b, 2016b).

3.1.2 Independent Variable

We considered firms’ ethical behavior as the independent variable in this study. This variable refers to as the degree to which firms in a country engage in ethical conduct in their interactions with public officials, politicians, and other firms. We measured it using the indicator representing “In your country, how do you rate the corporate ethics of companies?”. We anchored this indicator on a seven-point Likert scale from

“extremely poor—among the worst in the world (1) to “excellent—among the best in the world” (7). We also obtained the scores for it from the WEF’s Global Competitiveness Reports (World Economic Forum, 2014, 2015a).

3.1.3 Mediating Variables

We considered two mediating variables in this study: customer orientation and innovation capacity. We measured customer orientation using the indicator representing “In your country, how well do companies treat customers?” and anchored it on a seven-point scale from “poorly; mostly indifferent to customer satisfaction” (1) to “extremely well; highly responsive to customers and seek customer retention” (7). And, innovation capacity was measured using the indicator representing “In your country, to what extent do companies have the capacity to innovate?” and was anchored on a 1-to-7 scale with “1” representing “not at all” and “7” representing “to a great extent.” As with the dependent and independent variables, we obtained the scores for them from the WEF’s Global Competitiveness Reports (World Economic Forum, 2014, 2015a).

3.1.4 Control Variables

We employed five control variables in this study: 1) gross domestic product (GDP), 2) regional difference, 3) literacy rate, 4) Internet diffusion among individuals, and 5) tax rate. We selected these control variables because they made theoretical and logical sense to our research model and analysis and prior macro-level studies have used them (e.g., Krishnan et al., 2017; Larosiliere et al., 2017; Srivastava et al., 2016). Prior studies have indicated that a country’s financial stability influences its innovation capability level (Kim et al., 2012). Accordingly, we used GDP to control for a country’s financial condition on innovation capacity and B2C e-commerce diffusion. GDP indicates a country’s macroeconomic capabilities, living standard, and productivity. For this study, we used GDP per capita adjusted for purchasing power parity (PPP), the values for which we took from the WEF’s Global Competitiveness Reports (World Economic Forum, 2013, 2014). Further, consistent with past studies that have found the country-level difference across various regions to describe various cross-country phenomena (e.g., Khan et al., 2020), we controlled for the effect that regional difference had on innovation capacity and B2C e-commerce diffusion. Specifically, following the World Bank’s (2018) regional classification, we coded countries into seven groups (i.e., North America; Latin America and Caribbean; Europe and Central Asia; East Asia and Pacific; South Asia; Middle East and North Africa; and Sub-Saharan Africa). Literacy is essential for individuals and firms dealing with innovation and to influence ICT diffusion in a country. Thus, in line with Vicente and López (2006), we controlled for the effect that literacy rate had on innovation capacity and B2C e-commerce diffusion among firms. According to the United Nations (UN) E-Government Survey Report, literacy rate represents “the percentage of people aged 15 years and above who can, with understanding, both read and write a short simple statement on their everyday life” (United Nations, 2016, p. 137). We obtained the values for it from the United Nations (2014). Further, researchers have widely acknowledged technological infrastructure to determine e-business development in a country (Srivastava & Teo, 2010), and Internet diffusion among individuals in a country constitutes a crucial factor to measure its technological infrastructure sophistication (World Economic Forum, 2016b). Accordingly, we controlled for the effect that Internet diffusion among individuals had on B2C e-commerce diffusion. Internet diffusion among individuals refers to the extent to which individuals use the Internet in a country. We measured it as the percentage of individuals using the Internet in a country, and we took the values for it from the International Telecommunication Union database (International Telecommunication Union, 2013, 2014). Tax rate represents one of the most problematic factors for conducting business (World Economic Forum, 2017b), and we expect it to influence various business decisions in a country. Thus, we controlled for its effect while examining B2C e-commerce diffusion among firms. We obtained the score for this variable from the WEF’s Global Competitiveness Reports (World Economic Forum, 2013, 2014), which presented the variable as profit tax (% of profits), labor tax and contribution (% of profits), and other taxes (% of profits) in combination.

3.2 Reliability and Validity

We obtained the key variables in this study from GITR and GCR reports that the WEF published and that adopted stringent procedures for ensuring data’s reliability and validity. For these reports, the WEF administered the efforts to collect data at the national level via a network of reputable partner institutes. These institutes followed detailed guidelines to ensure that they obtained the most representative and comparable respondent samples around the world. To reduce bias, these institutes randomly selected

samples from the sample frame. The survey was administered in various formats, such as face-to-face or telephonic interviews with business executives, mailed paper forms, and online surveys. To prepare the final dataset, they conducted various tests to confirm the data's reliability and validity. First, they excluded data that showed inadequate focus from the respondents. Further, they excluded surveys with at least 80 percent of the same responses and surveys with a completion rate below 50 percent completion. They also made efforts to identify and remove duplicate surveys. Second, they performed tests to ensure that an individual survey conducted in a specific country actually belonged to that country's sample. Third, they aggregated individual responses by computing a simple average at the country level and then ran a test to detect any excessive perception bias. Finally, they performed tests to identify any large swings—positive and negative—in the results to confirm the data's reliability and consistency over time. With that said, note that past studies in top-tier journals such as *Information Systems Frontiers*, *Communications of the Association for Information Systems*, *Journal of the Association for Information Science and Technology*, and *MIS Quarterly* have used indicators such as ICT diffusion among firms (similar to B2C e-commerce diffusion), Internet diffusion among individuals, virtual social network usage, and the macroeconomic environment from these reports.

4 Analyses and Results

4.1 Descriptive Statistics and Correlations

Table 3 presents the descriptive statistics and correlations for all variables. As one can see, most correlations were significant at $p < 0.05$. Further, correlations between the explanatory variables were below the threshold value 0.8, which indicates minimal concern for multicollinearity (Gujarati & Porter, 2009; Kennedy, 1998). Furthermore, the results from the collinearity tests that measured variance inflation factor (VIF) also indicate minimal concern for multicollinearity. According to Dewan, Ganley, and Kenneth (2005), VIFs over 10 indicate multicollinearity concerns, whereas Fox (1991) put a more stringent boundary by mentioning that VIFs over four and tolerance levels below 0.25 may indicate the potential for multicollinearity. Our tests found VIFs that ranged from 1.08 to 3.96 with all tolerance levels above 0.25, which confirms that multicollinearity did not primarily affect our research model.

Table 3. Descriptive Statistics and Correlations

| Variables | M | SD | ETH | CUS | INV | GDP ^a | REG | LIT | INT | TAX |
|------------------|-------|-------|--------|--------|--------|------------------|--------|--------|--------|--------|
| ETH | 4.17 | 0.96 | - | | | | | | | |
| CUS | 4.56 | 0.68 | 0.701 | - | | | | | | |
| INV | 3.79 | 0.78 | 0.789 | 0.758 | - | | | | | |
| GDP ^a | 4.69 | 1.87 | 0.285 | 0.458 | 0.508 | - | | | | |
| REG | 3.66 | 2.15 | -0.283 | -0.469 | -0.376 | -0.422 | - | | | |
| LIT | 0.87 | 0.17 | 0.399 | 0.490 | 0.429 | 0.321 | -0.723 | - | | |
| INT | 0.45 | 0.22 | 0.459 | 0.507 | 0.474 | 0.306 | -0.499 | 0.589 | - | |
| TAX | 42.09 | 26.74 | -0.135 | -0.095 | -0.062 | 0.016 | 0.097 | -0.223 | -0.140 | - |
| B2C | 4.53 | 0.87 | 0.657 | 0.793 | 0.805 | 0.566 | -0.650 | 0.649 | 0.565 | -0.128 |

Note: n = 128, M: mean, SD: standard deviation. ^a Log transformed variable.
 ETH: firms' ethical behavior; CUS: customer orientation, INV: innovation capacity, GDP: GDP per capita, REG: regional difference, LIT: literacy rate, INT: Internet diffusion, TAX: tax rate, B2C: B2C e-commerce diffusion.
 All correlations significant at $p < 0.05$ (2-tailed) except the italicized ones.

4.2 Hypotheses Testing

Given the significance of the mediating effects in our research model, we had to conduct systematic analyses to examining them. We adopted a bootstrapping-based mediation analysis as Preacher and Hayes (2008) suggest to test our hypotheses using the PROCESS macro (Hayes, 2018). As Figure 2 depicts, our research model contained two mediators, and Preacher and Hayes' (2008) method applies well such multiple-mediator models. This method examines the total and direct effects that the independent variable has on the dependent variable and the indirect effects through the mediators. The bootstrapping-based mediation analysis essentially constitutes a non-parametric test, which involves repeatedly random sampling with replacement from the dataset and computing the indirect effects of

mediators in each resample. Based on the computation over thousands of repeated samples, the method empirically approximates the sampling distribution of the indirect effects and generates confidence intervals are generated for the indirect effects

We adopted this method for several reasons. Traditional mediation-analysis methods such as the causal steps strategy (Baron & Kenny, 1986) and the Sobel (1982) test do not entirely suit our model and suffer from two shortcomings. First, these methods assume that both the paths constituting the indirect effects and the total and specific indirect effects have a normal sampling distribution, which rarely occurs in finite samples (Preacher & Hayes, 2008). As one cannot really know whether the distribution will satisfy the normality assumption, researchers recommend a test that does not require such assumption as the better approach to test mediation effects (Hayes, 2018). Second, research has shown the normal theory approach, which traditional methods follow (e.g., Sobel test), to have the lowest power and to likely generate less accurate confidence intervals than bootstrapping-based methods (Hayes, 2018; Hayes & Scharkow, 2013). As a result, even though the independent variable indirectly affects the dependent variable through the mediator, one would hardly detect it. Therefore, research has suggested bootstrapping as the best approach for testing the indirect effects in a mediator-based model (Preacher & Hayes, 2008).

In their paper, Preacher and Hayes (2008) report the total, direct, and indirect effects and estimates each mediator's indirect effect size. Besides, bootstrapping generates a 95 percent confidence interval for each mediating relationship. If zero does not fall between the resulting confidence intervals, one would consider the indirect or the mediation effect significant. As Hayes (2018) recommends, we used 5,000 bootstrap samples (each sample with a sample size $N = 128$) from the original dataset to perform the mediation analyses and generate bootstrap confidence intervals. Table 4 shows the research model's path coefficients, and Table 5 shows the total, direct, and indirect effects.

To test H1, we examined a total effect model with the dependent, independent, and all five control variables. As Figure 3 (top) shows, firms' ethical behavior was significantly and positively associated with B2C e-commerce diffusion with a coefficient of 0.3715 ($p < 0.001$). Thus, the total effect size was 0.3715 and significant, which supports H1.

Table 4. Hypotheses Testing Results

| | Path coefficients | | |
|-----------------------------|-------------------|-----------|------------|
| | CUS | INV | B2C |
| Control variables | | | |
| REG | -0.0933*** | 0.0067 | -0.0903*** |
| GDP ^a | | 0.0957*** | 0.0448** |
| LIT | | 0.0966 | 0.7253** |
| INT | | | 0.0495 |
| TAX | | | -0.0009 |
| Independent variable | | | |
| ETH | 0.4394*** | 0.4208*** | -0.0058 |
| Mediating variables | | | |
| CUS | | 0.3287*** | 0.3262*** |
| INV | | | 0.4635*** |
| R square | 0.5712 | 0.7459 | 0.8353 |

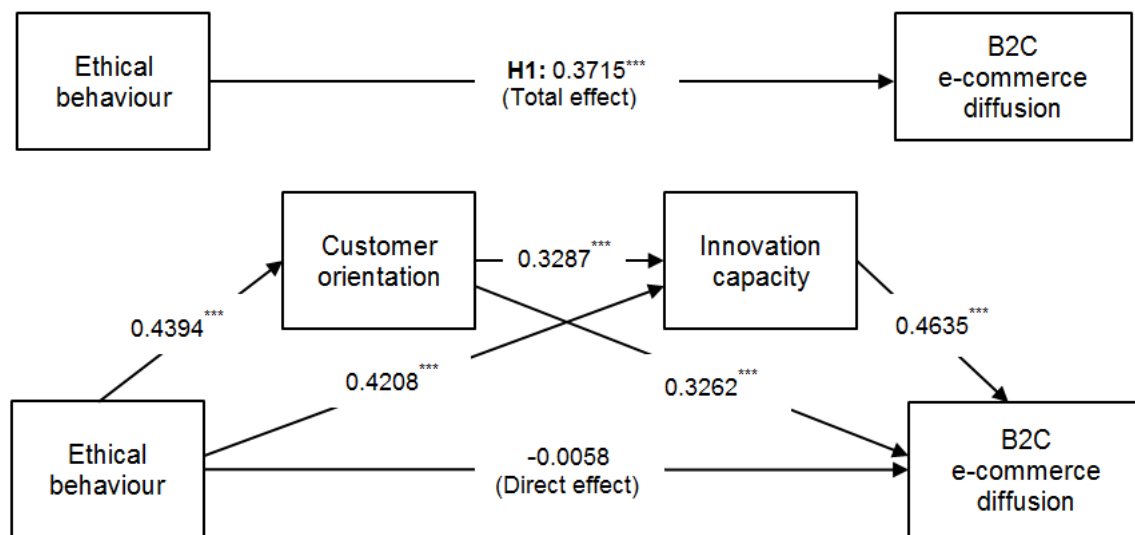
Note: $n = 128$. ^a Log transformed variable. We did not standardize reported path coefficients.
 REG: regional difference, GDP: GDP per capita, INT: Internet diffusion, LIT: literacy rate, TAX: tax rate, ETH: firms' ethical behavior,
 CUS: customer orientation, INV: innovation capacity, B2C: B2C e-commerce diffusion among firms.
 *** $p < 0.001$; ** $p < 0.05$ (two-tailed).

Table 5. Mediation Analysis

| Path | Total effect | Direct effect | Indirect effect |
|-----------------|---|--------------------------------|---|
| ETH→CUS→B2C | 0.3715 (0.2743 to 0.4688) ^a | -0.0058 (-0.1246 to 0.1130) | 0.1433 (0.0705 to 0.2229) ^a |
| ETH→INV→B2C | | | 0.1950 (0.1106 to 0.2864) ^a |
| ETH→CUS→INV→B2C | | | 0.0669 (0.0254 to 0.1163) ^a |

Note: N = 128. We report bias-corrected 95 percent confidence intervals in parentheses and computed them with bootstrapping using 5,000 resamples.
 ETH: firms' ethical behavior, CUS: customer orientation, INV: innovation capacity, B2C: B2C e-commerce diffusion among firms.
^a95 percent confidence intervals that do not include a zero.

To test the mediation effects, we tested a full model which we show in Figure 3 (bottom). For H2, we found that the paths from ethical behavior of firms in a country to their customer orientation ($\beta = 0.4394$, $p < 0.001$) and from customer orientation to B2C e-commerce diffusion ($\beta = 0.3262$, $p < 0.001$) were all significant. Further, we can see from Table 5 that the indirect effect size for the path ETH→CUS→B2C was 0.1433 and significant as the 95 percent bootstrap confidence interval (0.0705 to 0.2229) did not contain zero. Therefore, we found support for H2.



- H2: ETH → CUS → B2C
- H3: ETH → INV → B2C
- H4: ETH → CUS → INV → B2C

Note. N=128; *** $p < 0.001$

Figure 3. Hypotheses Results

For H3, we focused on the ETH→INV→B2C path with innovation capacity as the mediator. The results, as Figure 3 (bottom) shows, revealed that the paths from firms' ethical behavior to their innovation capacity ($\beta = 0.4208$, $p < 0.001$) and from innovation capacity to B2C e-commerce diffusion ($\beta = 0.4635$, $p < 0.001$) were all significant. The indirect effect size, as Table 5 shows, for this path was 0.1950 and significant as the 95 percent bootstrap confidence interval (0.1106 to 0.2864) did not include zero. Hence, we found support for H3.

For H4, we focused on the ETH→CUS→INV→B2C path, which reflects the “serial” (Hayes, 2018, p. 149) mediation that customer orientation and innovation capacity have on the relationship between firms' ethical behavior and B2C e-commerce diffusion. As Figure 3 (bottom) shows, we found that the paths from firms' ethical behavior to their customer orientation ($\beta = 0.4394$, $p < 0.001$), from customer orientation to their innovation capacity ($\beta = 0.3287$, $p < 0.001$), and from innovation capacity to B2C e-commerce

diffusion ($\beta = 0.4635$, $p < 0.001$) were all significant. Further, the indirect effect size for this path was 0.0669, and the 95 percent bootstrap confidence interval (0.0254 to 0.1163) indicated that the two mediators significantly and serially mediated the indirect effect that firms' ethical behavior had on B2C e-commerce diffusion, which supports H4.

5 Robustness Test

While we found support for all our hypothesized relationships, we further investigated the research model with two other data sets to ensure our findings' robustness. Thus, we conducted the test to verify whether the results held across multiple analyses with datasets about different years. For the first data set, we dropped the assumption of maintaining lag between the independent and dependent variables¹; hence, we collected data for all the variables for the years 2015 and 2016 for 128 countries and prepared the dataset for analysis by taking a statistical mean of values over these two successive years. For the second data set, we dropped the idea of taking a statistical mean of values and gathered data for the dependent variable for the year 2016, the mediating variables for 2015, and the independent variable for 2014 in order to maintain lag. We performed the bootstrapping-based mediation analysis that Preacher and Hayes (2008) suggest to conduct bootstrapping-based mediation analyses to examine the total effect, the direct effect, and the indirect effect for both datasets. Table 6 and Table 7 show the results for first and the second datasets, respectively. We found similar results to what we report in Table 4 and Table 5. In summary, we found support for all hypotheses in both analyses, which indicates our results' robustness.

Table 6. Results of First Robustness Test

| | Path coefficients | | | Indirect effects | |
|--|-------------------|-----------|------------|-------------------------|--|
| | CUS | INV | B2C | Unstandardized estimate | Unstandardized bootstrap 95% confidence interval |
| Control variables | | | | | |
| REG | -0.1068*** | 0.0342 | -0.0812*** | | |
| GDP ^a | | 0.0759*** | 0.0443* | | |
| LIT | | 0.3072 | 0.2944 | | |
| INT | | | 0.6145** | | |
| TAX | | | -0.0018 | | |
| Independent variable | | | | | |
| ETH | 0.4810*** | 0.3819*** | -0.0970 | | |
| Mediating variables | | | | | |
| CUS | | 0.4265*** | 0.2804*** | | |
| INV | | | 0.5306*** | | |
| R square | 0.6232 | 0.7354 | 0.8544 | | |
| Total indirect effect | | | | 0.4524 | 0.3218 to 0.5936 |
| ETH→CUS→B2C | | | | 0.1349 | 0.0560 to 0.2120 |
| ETH→INV→B2C | | | | 0.2026 | 0.1174 to 0.2961 |
| ETH→CUS→INV→B2C | | | | 0.1088 | 0.0541 to 0.1810 |
| Note: N = 128. We constructed bootstrap confidence intervals using 5,000 resamples. We did not standardize reported path coefficients. REG: regional difference, GDP: GDP per capita, INT: Internet diffusion, LIT: literacy rate, TAX: tax rate, ETH: firms' ethical behavior, CUS: customer orientation, INV: innovation capacity, B2C: B2C e-commerce diffusion among firms. *** p < 0.001, ** p < 0.01, * p < 0.05 (two-tailed). ^a Log transformed variable. | | | | | |

¹ We thank the first reviewer for this suggestion.

Table 7. Results of Second Robustness Test

| | Path coefficients | | | Indirect effects | |
|--|-------------------|-----------|-----------|-------------------------|--|
| | CUS | INV | B2C | Unstandardized estimate | Unstandardized bootstrap 95% confidence interval |
| Control variables | | | | | |
| REG | -0.1064*** | 0.0320 | -0.0767** | | |
| GDP ^a | | 0.0883*** | 0.0487* | | |
| LIT | | 0.2379 | 0.1369 | | |
| INT | | | 0.7136** | | |
| TAX | | | -0.0011 | | |
| Independent variable | | | | | |
| ETH | 0.4494*** | 0.3985*** | -0.0866 | | |
| Mediating variables | | | | | |
| CUS | | 0.3651*** | 0.2953*** | | |
| INV | | | 0.4802*** | | |
| R square | 0.5723 | 0.7137 | 0.8497 | | |
| Total indirect effect | | | | 0.4076 | 0.3011 to 0.5215 |
| ETH→CUS→B2C | | | | 0.1327 | 0.0602 to 0.2062 |
| ETH→INV→B2C | | | | 0.1914 | 0.1092 to 0.2798 |
| ETH→CUS→INV→B2C | | | | 0.0788 | 0.0329 to 0.1335 |
| Note: N = 128. We constructed bootstrap confidence intervals using 5,000 resamples. We did not standardize reported path coefficients. REG: regional difference, GDP: GDP per capita, INT: Internet diffusion, LIT: literacy rate, TAX: tax rate, ETH: firms' ethical behavior, CUS: customer orientation, INV: innovation capacity, B2C: B2C e-commerce diffusion among firms. *** p < 0.001, ** p < 0.01, * p < 0.05 (two-tailed). ^a Log transformed variable. | | | | | |

In addition to the previous analyses, we used structural equation modeling (SEM) to ensure the PROCESS outcomes' robustness². In particular, we used SEM based on partial least squares (PLS) techniques for several reasons. First, PLS-SEM does not put any strict restrictions on the assumptions of the minimum sample size and data distribution (Hair et al., 2011). Second, PLS-SEM deals with skewness concerns and regressor omissions and appears to provide robust results (Cassel et al., 1999). Finally, exploratory research similar to this study has widely acknowledged PLS-SEM to be more suitable for data analysis (Hair et al., 2011). Hence, consistent with prior studies (e.g., Giovanis et al., 2015; Gong, 2018; Klein & Rai, 2009) that have performed SEM analysis in addition to PROCESS, we compared the PROCESS outcomes that we show in Tables 4 and 5 with the results from PLS-SEM that we present in Table 8 to check robustness.

As Table 8 shows, the model effectively explained the variance in B2C e-commerce diffusion among firms (with R² = 0.8355). Further, we observed that ethical behavior was positively and significantly associated with B2C e-commerce diffusion among firms in a country. Like our initial observation, we found customer orientation and innovation capacity to mediate this positive relationship. In summary, we observed the results we obtained from testing our hypotheses (see Tables 4 and 5) to hold in this SEM analysis, which affirms our findings' robustness.

Despite these analyses, we conducted further robustness tests to avoid possible endogeneity and reverse causality among ethical behavior, customer orientation, and innovation capacity³. While we proposed the hypotheses to signify a "relationship" rather than "causation" between the variables, implied causality could exist. Therefore, we carried out endogeneity tests to ensure that the proposed serial mediation path

² We thank the first reviewer for this suggestion.

³ We thank the first reviewer for this suggestion.

(particularly, ETH→CUS→INV) held firmly. In line with Srivastava et al. (2016), we used three-stage least squares (3SLS) regression with two additional instrumental variables (i.e., “legislative process effectiveness in the country” and the “auditing and accounting standard strength in the country”)⁴. The hypothesized relationship ETH→CUS→INV→B2C remained significant. The paths from ethical behavior to customer orientation ($\beta = 0.4941$, $p < 0.001$), from customer orientation to innovation capacity ($\beta = 0.7195$, $p < 0.001$), and from innovation capacity to B2C e-commerce diffusion ($\beta = 0.6403$, $p < 0.001$) were all significant, which eliminated the potential concerns about endogeneity and confirmed our results’ robustness. Furthermore, we conducted semi-structured interviews with six business professionals to study their perspectives on the possible causal relationships among firms’ ethical behavior, customer orientation, innovation capacity, and B2C e-commerce diffusion (see Appendix B). The interview data suggested that ethical firms tend to be customer centric and understand customer needs, which, in turn, boosts their innovation capacity and helps them innovate accordingly. This finding concurs with what we found in our main and post hoc analyses.

Table 8. Results of Third Robustness Test

| | Path coefficients | | | Indirect effects | |
|--|-------------------|-----------|------------|-------------------------|--|
| | CUS | INV | B2C | Unstandardized estimate | Unstandardized bootstrap 95% confidence interval |
| Control variables | | | | | |
| REG | -0.2941*** | 0.0169 | -0.2233*** | | |
| GDP ^a | | 0.2287*** | 0.0956* | | |
| LIT | | 0.0190 | 0.1430* | | |
| INT | | | 0.0122 | | |
| TAX | | | -0.0247 | | |
| Independent variable | | | | | |
| ETH | 0.6178*** | 0.5186*** | -0.0060 | | |
| Mediating variables | | | | | |
| CUS | | 0.2888*** | 0.2558*** | | |
| INV | | | 0.4153*** | | |
| R square | 0.5713 | 0.7462 | 0.8355 | | |
| Total indirect effect | | | | 0.4475 | 0.3405 to 0.5685 |
| ETH→CUS→B2C | | | | 0.1580 | 0.0841 to 0.2497 |
| ETH→INV→B2C | | | | 0.2154 | 0.1247 to 0.3217 |
| ETH→CUS→INV→B2C | | | | 0.0741 | 0.0328 to 0.1331 |
| Note: N = 128. We constructed bootstrap confidence intervals using 5,000 resamples. We did not standardize reported path coefficients. | | | | | |
| REG: regional difference, GDP: GDP per capita, INT: Internet diffusion, LIT: literacy rate, TAX: Tax rate, ETH: firms’ ethical behavior, CUS: customer orientation, INV: innovation capacity, B2C: B2C e-commerce diffusion among firms. | | | | | |
| *** p < 0.001; ** p < 0.01; * p < 0.05 (two-tailed). | | | | | |
| ^a Log transformed variable. | | | | | |

6 Discussion

Technological innovations, including IT innovations, have increasingly become a major pillar for a country’s economic growth (Dincer, 2019). Both a country’s development and a firm’s growth depend on their technical abilities, such as innovation, to a great extent (Luo, 2005). However, firms often engage in unethical practices to raise their performance, which affects their innovation-related activities. For

⁴ We measured legislative process effectiveness using the indicator representing “How effective is the legislative process in your country?” that we anchored on a seven-point Likert scale from “not effective at all” (1) to “extremely effective” (7). We obtained the scores for it from the WEF’s Global Information Technology Reports (World Economic Forum, 2015b, 2016b). We measured auditing and reporting standard strength using the indicator representing “In your country, how strong are financial auditing and reporting standards?” that we anchored on a seven-point Likert scale from “extremely weak” (1) to “extremely strong” (7). We obtained the scores for it from the WEF’s Global Competitiveness Reports (World Economic Forum, 2015a; 2016a).

instance, when a firm becomes involved in corruption, its business partners, suppliers, and other firms may perceive it as untrustworthy and refrain from conducting business with it (Luo, 2005), which hampers its innovation capacity and undertakings (Anokhin & Schulze, 2009). On a similar note, research has found firms' ethical behavior to positively impact process innovation and product innovation and, thus, to lead to a competitive advantage (Chang, 2011). We extend this thinking in our study with a specific focus on B2C e-commerce, an IT innovation essential for firms and countries to grow in this digital era. In essence, we posit that we know little about whether and how firms' ethical behavior relates to B2C e-commerce diffusion among firms in a country despite the growing focus on IT innovations and the increasing significance of corporate ethics across the world. We analyzed archival data about 128 countries that we took from reputable sources and found that a country likely has higher B2C e-commerce diffusion among its firms when they engage in ethical conduct. Further, our study emphasizes the significant role that customer orientation and innovation capacity play in explicating the mechanisms that underlie the above relationship. In doing so, this study makes several contributions to the literature on e-commerce and business ethics and imparts valuable insights to the policymakers and practitioners as Table 9 shows. We discuss the contributions in detail next.

Table 9. Preview of Study Contributions and Implications

| Contribution/implication | State of the literature | Relevance | |
|---|---|-----------|----------|
| | | Theory | Practice |
| This study constitutes an initial effort that contributes to the e-commerce and business ethics domains by theorizing and empirically examining the relationship between the extent to which firms in a country behave in an ethical manner and B2C e-commerce diffuses among them. | While prior studies suggest that ethical considerations (e.g., privacy and security issues) affect the B2C e-commerce diffusion's demand side (i.e., customer intention to use B2C e-commerce), it remains primarily underexplored whether and how ethics in firms relates to B2C e-commerce diffusion's supply side (i.e., the extent to which firms use ICT for B2C transactions). | ✓ | ✓ |
| This study draws on the ethical climate theory to explain the relationship between firms' ethical behavior and B2C e-commerce diffusion. In doing so, it extends the discourse on ethical climates and IS innovation diffusion. | While researchers have applied ethical climate theory to explain various work outcomes, such as organizational commitment, job satisfaction, and firm performance (Martin & Cullen, 2006), few have applied it in the IS domain. | ✓ | |
| This study accounts for the variation in B2C e-commerce diffusion levels across countries and conceives corporate ethics as a critical factor that determines this variation. Thus, it helps policymakers and practitioners understand why B2C e-commerce diffusion varies at the cross-country level. | Most prior studies have explained B2C e-commerce diffusion at the firm level (e.g., Hong & Zhu, 2006; Rowe et al., 2012); thus, we lack large-scale macro-level studies that explain why some countries struggle to attain a higher B2C e-commerce diffusion level. | ✓ | ✓ |
| This study contributes to the literature on the stakeholder theory and the RBV by theorizing and empirically validating how customer orientation and innovation capacity mediate the relationship between ethical behavior and B2C e-commerce diffusion among firms in a country. Further, the study suggests that a country where firms focus on customer needs and invest in building innovation capacity realizes a higher B2C e-commerce diffusion level. | Prior studies have mainly focused on stakeholder relationships in the market and financial performance context (Talke & Hultink, 2010), but we know relatively little about its significance in B2C e-commerce diffusion across countries. Similarly, we lack research that has conceptualized innovation capacity as a VRIN resource and examined its relevance to drive technological innovation among firms. | ✓ | ✓ |
| This study suggests that a country needs to focus on monitoring ethical interactions amongst firms and creating policies and regulations to develop a good ethical climate for a higher B2C e-commerce diffusion level among its firms. | While we know the significant role that corporate ethics play in various firm success parameters (e.g., stock value, reputation, and brand performance) across the world, we do not sufficiently understand whether such success extends to the B2C e-commerce context. | | ✓ |

6.1 Contributions to Research

This study offers several theoretical and research implications. First, while researchers and practitioners widely acknowledge corporate ethics as an important organizational issue with a role in influencing

business decisions, organizational behavior, and innovation endeavors, research has not sufficiently explored the linkage between the extent to which firms in a country behave in an ethical manner and the rate at which B2C e-commerce diffuses among them. Although prior literature has noted that one needs to consider ethical considerations (e.g., privacy and security issues) while designing and developing B2C e-commerce innovation and could affect B2C e-commerce diffusion's demand side (i.e., customer intention to use B2C e-commerce), we do not adequately understand whether ethics in firms relates to B2C e-commerce diffusion's supply side (i.e., the extent to which firms use ICT for B2C transactions). In this study, we provide important insights and a thorough theoretical discourse towards that direction and contribute to the e-commerce and business ethics domains. In doing so, we heed Holmström's (2018) call to more deeply theorize digital innovation initiatives and contribute to the IS literature by extending the digital innovation domain via offering a conceptual framework (see Figure 1) on the relationship between firms' ethical behavior and B2C e-commerce diffusion.

Second, drawing on the ethical climate theory, we explain the relationship between firms' ethical behavior and B2C e-commerce diffusion by arguing that the laws and professional codes ethical climate essentially helps organizations use ICTs for B2C transactions in a country. Prior studies have found that this ethical climate not only influences managerial decisions and behavior but also results in various work outcomes, such as organizational commitment, job satisfaction, psychological well-being, and firm performance (Martin & Cullen, 2006). By investigating the role that corporate ethics in a country play in promoting B2C e-commerce diffusion among its firms, we draw scholars' attention to another potential outcome (i.e., B2C e-commerce diffusion) and, thereby, extend the discourse on ethical climates.

Third, we present all nine ethical climate types in Table 2 and assess the extent to which they pertain to the study context we examine. We explain their relevance in the overall B2C e-commerce context (see second column in Table 2), which could involve various phenomena concerning B2C e-commerce, such as employees' ethical behavior, work efficiency, firms' performance, firms' profitability, employee commitment, firms' customer orientation, and customers' online purchase behavior, and so on. In particular, we provide potential illustrative accounts for applying the nine ethical climate types in explaining various phenomena regarding B2C e-commerce. Then, we indicate the extent to which these climates (see third column in Table 2) pertain to our study context. In sum, we present Table 2 to not only show that the three ethical climates (i.e., social responsibility, laws and professional codes, and team interest) pertain to this study but also help future research comprehend the broad theoretical perspective's applicability to other B2C e-commerce contexts. We believe that such a theoretical understanding will guide IS scholars to examine various phenomena in the purview of the ethical climate types.

Fourth, we found that both ethical behavior and B2C e-commerce diffusion among firms vary significantly across countries. That is, our study helps explain why some countries lag behind others in achieving higher B2C e-commerce diffusion among firms. The cross-country variation in firms' ethical behavior constitutes one plausible reason for this lag. Our study suggests that corporate ethics play a vital role for B2C e-commerce to thrive in a country. Further, given that we lack large-scale macro-level studies, this study constitutes an early effort to empirically investigate the relationship between firms' ethical behavior and B2C e-commerce diffusion at the cross-country level. As such, the study depicts the aforementioned relationship's global dynamics.

Fifth, drawing on the stakeholder theory and the RBV, we underscore the mediating role that customer orientation and innovation capacity have in the relationship between firms' ethical behavior and B2C e-commerce diffusion. In doing so, we contribute to stakeholder theory by revealing the substantial role that customer orientation plays in B2C e-commerce diffusion. Prior research on stakeholder management has primarily discussed the impact that stakeholder relationships have on the market (Talke & Hultink, 2010) and financial performances (Choi & Wang, 2009). Despite the increasing significance of B2C e-commerce innovation in this digital (and, specifically, online shopping) era, empirical studies have seldom examined whether customer orientation, as a stakeholder management aspect, affects B2C e-commerce innovation at the cross-country level. Addressing this gap, our study underlines the role that customer orientation plays in the B2C e-commerce innovation context and shows that customer orientation positively influences B2C e-commerce diffusion among firms in a country. Further, our findings indicate that, to transform customer needs and requirements into innovation, organizations need to develop B2C e-commerce and sufficient and appropriate resources. Drawing on the RBV, we identify innovation capacity as a VRIN resource for firms to drive their technological innovation, suggest that they need to consider ethics to build such resources and, thus, extend the literature on the RBV.

6.2 Implications for Practice

Our study also has implications for policy and practice. First, we provide empirical evidence for the positive relationship between corporate ethics and B2C e-commerce diffusion among firms and, thereby, help policymakers and practitioners understand why B2C e-commerce diffusion varies at the cross-country level. Our findings also imply that, in a country where firms behave ethically in interactions with the government and other firms, one can expect B2C e-commerce diffusion to grow in a positive direction. Thus, a country may focus on monitoring ethical interactions among firms because such interactions can determine the professional codes ethical climate that, in turn, encourages them to use B2C e-commerce. As the conceptual framework suggests (see Figure 1), the extent to which B2C e-commerce diffuses among firms in a country depends on the extent to which a country develops external codes such as laws and regulations and the government guidelines (about B2C e-commerce) and to which firms follow them. Corroborating this finding, the United Nations (2015) suggests that B2C e-commerce cannot grow unless a country has an adequate and supportive legal environment. In particular, a country requires relevant laws relating to e-transaction, consumer protection, privacy, and data protection to boost consumers' confidence in B2C e-commerce, which can lead to increased sales and cash flow for firms and, thus, contribute to higher B2C diffusion levels in a country. Therefore, countries—especially countries in the Middle East, Africa, Central and Eastern Europe, and Latin America, which lag behind others in B2C e-commerce sales (United Nations, 2015)—need to develop policies, rules, and regulations to shape firms' ethical orientation. Thus, public policies that serve to facilitate B2C e-commerce investment and use in a country should pay attention to developing a good ethical climate for advancing IT innovativeness.

Second, our findings underscore the need for firms to act in a customer-oriented manner to enhance extent to which B2C e-commerce diffuses among them. Researchers have argued that most B2C e-commerce initiatives fail due to low customer retention, unclear product value, poor website design, complex navigation, security issues, and other reasons, which firms could eliminate if they act in a customer-oriented manner (Clominson, 2019). For example, a customer orientation may encourage firms to focus on transparency and optimize the user experience by enabling greater navigation, simplifying the checkout process, and embedding interactive content. That is, a customer focus may help firms address what makes a great website and how they can achieve success. In surveying 1,253 failed e-commerce firm owners in the United Kingdom, Marketing Signals found that 35 percent of the respondents reported low demand for products and services they offered as a primary reason that led to the failure (Guta, 2019). When little to no market for the products and services a firm offers online exists, the firm may not survive, and a customer focus could help the firm understand what to offer and what to innovate. Thus, customer orientation represents a key factor that can help firms lower the failure rate and increase the extent to which they use B2C e-commerce, which can lead a higher B2C e-commerce diffusion level in a country. Accordingly, our study suggests that top managers should pay close attention to customer needs and demands and build good customer relationships to succeed in B2C e-commerce, which, in turn, will result in higher B2C e-commerce diffusion in a country.

Third, this study highlights the crucial role that innovation capacity plays in shaping how B2C e-commerce diffuses throughout the world. Without technological and human resources that directly determine innovation capacity, a firm is less likely to continue using B2C e-commerce. The Marketing Signals survey found that 90 percent of online B2C businesses fail within 120 days from their inception (Guta, 2019). Indeed, a country with such a higher failure rate will lag in terms of B2C e-commerce diffusion. As we indicated above, poor user experience represents a prominent reason for lower e-commerce diffusion levels. A poor user experience can cause customers to not spend considerable time on websites, which results in a decreased conversion ratio. Firms having a greater innovation capacity are likely to effectively address these concerns. Thus, top managers must understand innovation capacity's value as a crucial resource precisely because, in contrast to more transferable resources, it constitutes a firm-specific and deeply embedded resource (Barua et al., 2004). Thus, we suggest that firms need to invest in developing their innovation capacity by focusing on their members' technological expertise and knowledge base.

Fourth, this study further emphasizes that customer-oriented firms can determine the resources that B2C e-commerce innovation requires. That is, the customer orientation helps firms develop adequate innovation capacity. Organizations may easily understand what innovations represent essential ones and the strategic planning that they need to conduct to accumulate accurate resources with a customer-centric outlook. To illustrate, researchers have cited return difficulties and higher shipping costs as crucial reasons why customers abandon their carts (Clominson, 2019). A customer-oriented firm will likely better understand and value such customer needs and, thus, improve its innovation capacity and gather

necessary resources for an efficient supply chain. Furthermore, in many countries, understanding target customers' preferences has led to innovations such as mobile shopping and social shopping (social media-enabled e-commerce), which eventually yielded an increase in B2C e-commerce use. Accordingly, this study suggests that top managers must focus on understanding customer needs and concerns, which will enable them to strengthen their innovation capacity and, thus, lead to a higher B2C e-commerce diffusion level in a country. Table 10 highlights the key implications for policymakers and practitioners.

Table 10. Key Implications for Policymakers and Practitioners

| Stakeholders | Implications |
|--------------------------------|---|
| Policymakers and practitioners | This study helps the policymakers and practitioners understand why differing B2C e-commerce diffusion levels prevail across countries. This study further shows them the directions to increase the level of B2C e-commerce diffusion by focusing on corporate ethics, customer orientation, and innovation capacity. |
| Policymakers | This study illustrates the need to monitor ethical interactions among firms and suggests that policymakers must focus on developing policies, rules, and regulations relating to e-transaction, consumer protection, privacy, and data protection to shape firms' ethical orientation. |
| Practitioners | This study helps top managers in firms understand that being customer-oriented is the key to minimize the failure rate and increase the continuous usage of B2C e-commerce. |
| Practitioners | This study suggests that top managers must invest in developing innovation capacity to increase employees' knowledge base and technical competence to continue using B2C e-commerce. And, understanding customer needs and concerns will be the key to strengthening innovation capacity. |

6.3 Limitations and Future Research Directions

One must consider three key limitations when interpreting our study results. First, we used secondary data compiled from multiple sources to conduct a large-scale cross-country analysis. We used secondary data principally because we would not have been able to collect primary data at the cross-country level. Nevertheless, reputable agencies such as WEF administered the data-collection efforts and followed stringent guidelines to confirm the data's reliability and validity. Therefore, we believe that we made a reasonable choice to use secondary data given that we conducted such a large-scale study. Second, we used data from countries that appeared for all the data sources. As a result, we excluded countries such as Bhutan, North Korea, Tunisia, and others from the sample due to missing data. Finally, we used data from 128 countries for empirical investigation, which we found adequate given that research recommends that one requires at least 50 to avoid the concerns about degrees of freedom and efficiency (Hair et al., 2006). Third, we posit that causality represents a far more complex issue than our model shows. We might not conclusively establish the causality, although we conducted some statistical tests to support our arguments. Besides, in line with Das et al. (2017), we modeled the dependent variable as a lagged function of the independent variables to capture the delay between changes in the independent variables and changes in the dependent variable; in doing so, we improved our ability to evaluate causality. Nonetheless, one can consider our findings exploratory and, thus, as requiring further research and replication.

Future studies may move in various directions. First, we used data aggregated at the cross-country level in this study, and we had to rely on secondary data sources to ensure we could feasibly conduct a large-scale cross-country study. However, future studies may examine our phenomenon of interest at more granular analysis levels (e.g., in specific regional contexts). Second, we used two key mediators, customer orientation and innovation capacity, that we interpreted from the firm perspective. As supplier-centered, vendor-centered, or business partner-centered factors may influence B2C e-commerce innovation diffusion, future studies may examine such factors to help better explain the indirect effect that corporate ethics in a country has on B2C e-commerce diffusion among its firms. For instance, collaboration quality between firms using B2C e-commerce and their suppliers may influence B2C e-commerce diffusion in a country, and how suppliers perceive firms' ethical behavior may drive the former's intention to collaborate. Third, future research could explore various phenomena about B2C e-commerce (e.g., firms' intention to invest in B2C e-commerce) in light of the ethical climates that we discuss in Table 2.

7 Concluding Remarks

Researchers, policymakers, and practitioners have widely acknowledged the important role that both corporate ethics and IT innovations play in advancing a country. However, researchers have conducted little work to examine the role that firms' ethical behavior plays in shaping the B2C e-commerce innovation diffusion throughout the world. As an initial step towards developing an understanding in that direction, this study underlines the important role that corporate ethics in a country plays in B2C e-commerce diffusion and proposes a conceptual framework by focusing on the underlying mechanisms through which firms' ethical behavior could be associated with its B2C e-commerce diffusion. Drawing on the ethical climate theory, the stakeholder theory, and the RBV of the firm, we investigate 1) the direct association between the extent to which firms behave in an ethical manner in a country and the rate to which B2C e-commerce diffuses among them, and 2) the mediating effect that customer orientation and innovation capacity have on that relationship. We empirically validated our proposed research model using publicly accessible archival data from reputable sources. The findings suggest B2C e-commerce diffusion increases in a country when its firms engage in ethical conduct. We also found that customer orientation and innovation capacity likely serially mediate this effect. In summary, we believe that this study uncovers an exciting phenomenon, theoretical explanations, and empirical validations that we expect to enrich the IS literature and encourage future research.

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Appendix A

Table A1. Countries Analyzed (N = 128)

Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Chad, Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea Republic, Kuwait, Kyrgyz Republic, Latvia, Lebanon, Lesotho, Lithuania, Luxembourg, Macedonia FYR, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Rwanda, Saudi Arabia, Senegal, Serbia, Seychelles, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Swaziland, Sweden, Switzerland, Tanzania, Thailand, Trinidad and Tobago, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe;

Appendix B: Supplementary Details

While we found support for the serial mediation we proposed (i.e., ETH→CUS→INV→B2C path) through the main analysis and post hoc analyses (see Tables 4-8), concerns remained about the reverse order of customer orientation and innovation capacity (i.e., ETH→INV→CUS→B2C path)⁵. We submit that customer orientation has a more theoretically and practically pronounced influence on innovation capacity in the B2C context. We can logically presume that ethical firms focus on customer interests as stakeholder theory suggests, which, in turn, drives their innovation capacity as we indicate while developing the hypotheses in the paper. To further dig into this understanding, we conducted semi-structured telephonic interviews with six business professionals and studied their perspectives on the possible relationships among firms' ethical behavior, customer orientation, innovation capacity, and B2C e-commerce diffusion. These professionals included a chief information officer, general managers, a director, a senior director, and a vice president of large multinational corporations. We explained the study context (firms' ethical behavior and B2C e-commerce diffusion) and the study variables to them. We then asked them to share their knowledge of whether or how customer orientation and innovation capacity could influence/mediate the relationship between corporate ethics and B2C e-commerce diffusion among firms. The interview data suggested that ethical firms behave in a customer-oriented manner; they first strive to understand their customers' needs and concerns, gather resources, and innovate accordingly, which concurs with our arguments. Interviewee 1 held the following viewpoint:

Ethical corporate is likely to be genuinely interested in the welfare of its customers. Promoting the welfare of immediate customers (with finite resources) gives rise to innovation - product and process innovations, which in turn drive B2C. For example, it is customer focus that made Indian retail realize that customers have constraints in paying upfront (e.g., no credit card), hence the innovation of cash on delivery... so, when we talk about focused innovation, it is theme based. And, the themes mostly come from customer focus (there can be cost based themes as well). It is safe to say that most top line based themes have customer focus.

Along similar lines, Interviewee 2 stated:

If firms are not customer-centric (unlike outliers like Apple), they will not be able to innovate. Even if we have innovation programs (in our company or other companies), it does not take off until we know the pulse of the customers. Ethics will be followed by customer-centricity because ethical behavior drives customer orientation. I do not think that a firm can jump into innovation. It may but that cannot lead to customer-centricity unless you are Apple... that is probably the trend. Otherwise, what should I innovate (if I do not understand customer needs)? The innovation and capacity to innovate will be directionless. Let's say about an aggregator where you can compare prices before booking a hotel. That is also customer orientation. This API led innovation is also driven by customer centricity because they understood the customer demand for comparing prices...they filled that gap in the market....

The other interviewees also corroborated our arguments and the findings from the main analysis and post hoc analyses. Motivated by the theoretical reasoning and practitioners' viewpoints, we underline that a customer orientation helps firms plan strategically how and what to innovate. In the B2C e-commerce context, customers represent the key to whether firms succeed, and firms' ethical orientation could largely shape their customer orientation, which could boost their innovation capacity and B2C e-commerce diffusion. Taken together, we posit that the extent to which firms in a country act in an ethical manner positively relates to B2C e-commerce diffusion among them and that customer orientation and innovation capacity serially mediate this relationship.

⁵ We thank the editor for highlighting this possibility.

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