Influences of Utilitarian and Hedonic Motivations on Purchase Intention via Green Delivery: Through the Lens of the Environmental Theory of Planned Behavior

Mohammad Shahidul Kader[1], Md Rashaduzzaman[2], Xiao Huang[1], Seeun Kim[1]
Auburn University[1], University of Nebraska-Lincoln[2]
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Introduction: Since early this century, with a variety of marketing channels and competitive retailing, consumers are adopting online shopping rather than brick-and-mortar shopping (Manganari et al., 2009). Competitive prices, versatile products, and time convenience contribute to the exponential growth of e-retail across the world (Rashaduzzaman, 2020; Wei et al., 2018). Furthermore, COVID-19 boosts e-commerce penetration and resulted in $174.87 billion in e-commerce revenue in 2020, a growth rate of 21.3% in 2020 (Ali, 2021). Although e-retail delivery uses less energy and produces less CO_2 emissions than traditional retailing (Weber et al., 2008), the lack of environmentally responsible delivery practices causes serious environmental impact (Banker, 2019). Green delivery is a form of an environmental-friendly solution in online shopping that incorporates either of these options: 1) eco-friendly packaging materials, 2) eco-friendly transportation (e.g., energy-efficient transportation), and 3) optimum space management (e.g., product & delivery box volume ratio, delivery vehicle's space management) (Johnstone & Tan, 2015; Jules, 2020). Previous studies on green delivery solutions have mostly focused on innovative transportation (e.g., drone delivery), energy-efficient system, life cycle assessment, and greenhouse gas emission (Koiwanit, 2018; Stolaroff et al., 2018), but surprisingly little research has delved into consumer's perception of green delivery purchase. To address this gap, we proposed a hierarchical model identifying consumers' distinct motivations and traits in forming their purchase intention via green delivery (PIGD).

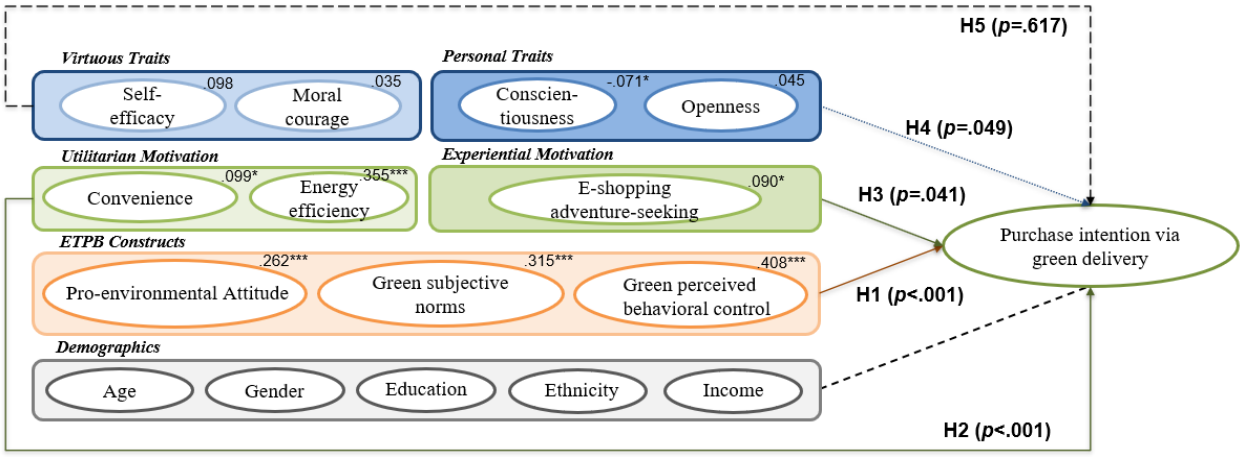
Literature Review: In this study, the environmental theory of planned behavior (ETPB) incorporates consumer motivations and traits into an adaptation of the theory of planned behavior (TPB; Ajzen, 1985) to predict PIGD. Here, we hypothesized that three ETPB variables including pro-environmental attitude (PA) green subjective norms (GSN), and green perceived behavioral control (GPBC) predict PIGD after accounting for demographic variables (*H1*). Consumers' utilitarian motivation including convenience (CV) and energy efficiency (EE) may exert positive reactions toward PIGD (Dogan & Ozmen, 2019). Therefore, utilitarian motivations (CV, EE) predict PIGD after accounting for demographic variables and three ETPB constructs (*H2*). Although, the role of hedonic motivation in predicting green consumption is still arguable (Choi & Johnson, 2019); we posit that hedonic motivation (i.e., e-shopping adventure-seeking, EAS) predict PIGD after accounting for demographic variables and three ETPB constructs (*H3*). Furthermore, some consumers could be either reluctant or enthusiastic to participate in green consumption practices due to their personality traits (openness, OP and conscientiousness, CN) and virtuous traits (self-efficacy, SE and moral courage, MC) (Song & Kim, 2018; Wonneberger, 2018). Therefore, personal traits (*H4*) and virtuous traits (*H5*) are hypothesized to predict PIGD after accounting for demographic, ETPB constructs, utilitarian, and hedonic motivations.

Method: A total of 319 (Male: 53.9%, M_{age} = 40 years) U.S. residents above 18 years were recruited from the Amazon MTurk. The survey instruments comprised of three parts: 1) screening questions, 2) measures of the 12 variables, and 3) demographic items. Five-point Likert-type scales (1 = *strongly disagree* to 5 = *strongly agree*) were employed for all variable measures. Cross-loaded and low factor-loading items were dropped and Cronbach's alphas for all measures were above .70.

Results and Discussion: Hypotheses were tested using hierarchical regression analyses. In Model 1, three ETPB variables (PA, GSN, GPBC) were examined as predictors for PIGD after controlling for the demographic variables (*H1*). Results showed that three ETPB variables significantly predicted PIGD, ΔF (3, 299) = 170.633, ΔR^2 = .603, p < .001, supporting H1. In Model 2 and Model 3, utilitarian motivation variables (CV, EE; *H2*) and hedonic motivation variable (EAS; *H3*) were added as predictors for PIGD after controlling the influences of demographic and the ETPB variables, respectively. Results showed that utilitarian motivations, ΔF (2, 297) = 33.302, ΔR^2 = .064, p < .001, and hedonic motivation, ΔF (1, 298) = 4.202, ΔR^2 = .005, p = .041, significantly predicted PIGD, supporting H2 and H3. Finally, personal traits (OP, CN; *H4*) and virtuous traits (SE, MC; *H5*) were added separately to the fourth and fifth models, respectively, as predictors after controlling for the demographic, ETPB, and motivation variables. Personal traits significantly predict PIGD, ΔF (2, 294) = 3.054, ΔR^2 = .001, p = .049, partially supporting H4. However, virtuous traits did not significantly predict PIGD, ΔF (2, 294) = .484, ΔR^2 = .001, p = .617, not supporting H5.

Figure 1

Hierarchical Regression Model



Discussion and Implications: The current study provides researchers one-of-a-kind literature on the discrepancy between green perception and behavioral outcome in the context of the green delivery purchase. To methodological contribution, the current study developed and validated the green delivery scales from existing instruments. As regards practical implications, both e-retailers and shipping firms could adopt the innovative strategy of green delivery based on consumer adaptability derived from this study.

References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer, Berlin, Heidelberg.

Ali, F. (2021, February 1). US ecommerce grows 44.0% in 2020. Retrieved February 23, 2021, from https://www.digitalcommerce360.com/article/us-ecommerce-sales/#:~:text=Online's%20share%20of%20total%20retail,2019%20and%2014.3%25%20in%202018.

Banker, S. (2019, October 10). Be good to the Earth: Ship using Amazon Day. Retrieved February 23, 2021, from https://www.forbes.com/sites/stevebanker/2019/10/09/be-good-to-the-earth-ship-using-my-amazon-delivery-day/?sh=56332fc7a36c

Choi, D., & Johnson, K. K. (2019). Influences of environmental and hedonic motivations on intention to purchase green products: An extension of the theory of planned behavior. *Sustainable Production and Consumption*, *18*, 145-155.

Dogan, V., & Ozmen, M. (2019). Belief in environmentalism and independent/interdependent self-construal as factors predicting interest in and intention to purchase hybrid electric vehicles. *Current Psychology*, *38*(6), 1464-1475.

Johnstone, M. L., & Tan, L. P. (2015). Exploring the gap between consumers' green rhetoric and purchasing behaviour. *Journal of Business Ethics*, *132*(2), 311-328.

Jules (2020, February 04). Green & Eco-friendly Solutions: EASYSHIP BLOG. Retrieved February 23, 2021, from https://www.easyship.com/blog/green-.

Koiwanit, J. (2018, May). Contributions from the Drone Delivery System in Thailand to Environmental Pollution. In *Journal of Physics: Conference Series* (Vol. 1026, No. 1, p. 012020). IOP Publishing.

Manganari, E. E., Siomkos, G. J., & Vrechopoulos, A. P. (2009). Store atmosphere in web retailing. *European Journal of Marketing*, *43*(9/10), 1140-1153.

Rashaduzzaman, M. (2020). *Influence of Convenience, Time-savings, Price, and Product Variety on Amazon Prime Members and Non-Prime Shoppers' Online Apparel Purchase Intention.* (Publication No. 16) [Doctoral Dissertation, University of Nebraska-Lincoln]. DigitalCommons.

Stolaroff, J. K., Samaras, C., O'Neill, E. R., Lubers, A., Mitchell, A. S., & Ceperley, D. (2018). Energy use and life cycle greenhouse gas emissions of drones for commercial package delivery. *Nature communications*, *9*(1), 1-13.

Song, S. Y., & Kim, Y. K. (2018). Theory of virtue ethics: do consumers' good traits predict their socially responsible consumption? *Journal of Business Ethics*, *152*(4), 1159-1175.

Weber, C. L., Hendrickson, C. T., Matthews, H. S., Nagengast, A., Nealer, R., & Jaramillo, P. (2009, May). Life cycle comparison of traditional retail and e-commerce logistics for electronic products: A case study of buy. com. In *2009 IEEE International Symposium on Sustainable Systems and Technology* (pp. 1-6). IEE