

ADDRESSING SUSTAINABILITY IN FASHION THROUGH GOAL FRAMES AND THE THEORY OF PLANNED BEHAVIOR PERSPECTIVES

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ABSTRACT

The throwaway fast fashion culture leads to increasing wasteful consumption and the dwindling of the world's natural resources. Thus, it has become apparent that for the good of the environment, consumers need to decrease frequency of buying clothes as a form of pro-environmental behavior (PEB). By linking the Theory of Planned Behavior and Goal-Framing Theory, this study determined factors that can encourage consumers towards PEB performance as well as the influence of goal frames on these factors. This study also explored how consumers' clothing involvement moderates the effectiveness of these goal frames. Experiments with 350 female respondents were conducted. Results showed that attitude was significantly influenced by environment-frame, while subjective norms was influenced both by environment-frame and image-frame. Results also established a moderating effect of clothing involvement due to enjoyment on the influence of image-frame on subjective norms. The implications in the field of environmental communications were also discussed.

KEYWORDS

fast fashion; goal frames; clothing involvement; pro-environmental behavior

INTRODUCTION

The Brundtland Commission defines sustainable development as “development that meets the needs of the present without compromising future generations’ ability to meet their own needs” (World Commission on Environment and Development, 1987: 27). In the September 2015 U.N. Sustainable Development Summit, the 2030 Sustainable Development Agenda proposed 17 key goals, including the goal of responsible consumption and production (United Nations, 2015). However, industrialization continues to undermine this concept of development because of high-level consumerism and marketing (Claudio, 2007). In particular, the clothing industry, which accounts for about 1.2 billion tons of carbon dioxide per year, has an enormous environmental impact equivalent to 3–6.7% of the world’s greenhouse gas emissions (Laitala, Klepp, & Henry, 2018). Moreover, about 80% of the global clothing wastes goes into landfills. Disposed clothing could take approximately 200 years to decompose, during which these materials release methane, a type of greenhouse gas that is more harmful to human health than carbon dioxide (McCarthy, 2018).

In the clothing industry, the fast fashion trend drives the increasing rate of purchasing clothes due to the speed of changing styles (Bianchi & Birtwistle, 2012). Fast fashion refers to mass-produced, highly in-demand, low cost, and low-quality clothing collections that imitate authentic and luxury fashion brands (Joy, Sherry, Venkatesh, Wang, & Chan, 2012; Fernie & Sparks, 2004). However, this fashion trend is linked with unsustainability as it eventually results in adverse environmental impacts, particularly natural resource depletion and waste generation (Joy et al., 2012). Because of this wasteful consumption, environmentalists are finding ways to influence consumers’ purchase behavior as regards fashion (Boström & Micheletti, 2016).

The industry has been initiating a shift towards a sustainable fashion trend known as slow fashion, which encourages consumers to reduce their frequency of buying clothes (Cataldi, Dickson, & Grover, 2017) and which considers practicality, simplicity, and authenticity as fundamental (Karg, 2015). Pookulangara and Shephard (2013) established that slow fashion never goes out of style and consists of clothes made with care and precision. Moreover, the quality of materials used ensures that slow fashion garments last long (Wood, 2009). Consumers also usually develop emotional connection with these clothes (Holt, 2009). However, slow fashion has

yet to be widely adopted unlike fast fashion (McNeill & Moore, 2015) due to its relatively higher prices.

To promote sustainability in the clothing industry, there is a need to establish a greater awareness of the link between decreased patronage of fast fashion and pro-environmental behavior (PEB). Steg and Nordlund (2012) define PEB as actions that improve environmental welfare. Lessening one's frequency of purchase of clothes will be a move away from the fast fashion trend and it certainly qualifies as PEB since it promotes waste reduction and decreased consumption of resources. In this regard, this study then proposes that reducing frequency of clothing purchases can be encouraged if people are made more aware of the environmental impact of fast fashion. The Goal Framing Theory and the Theory of Planned Behavior are the theoretical frameworks used to determine if goal-framed messages can create this awareness and influence a change in attitudes, subjective norms, and perceived behavioral control (PBC) towards intention to reduce frequency of buying clothes. These message frames are based on hedonic, gain, or normative goals as they relate to the environment.

The Theory of Planned Behavior

Ajzen's (1991) theory of planned behavior (TPB) proposes that one's intention depends on three antecedents, namely, attitude, subjective norms, and PBC. *Attitude* towards a specific behavior is determined by the belief that performing such behavior would result in either good or bad outcomes, which then is assumed to influence intention to engage in such particular behavior. Normative belief is the expectation that relevant others would want a person to perform certain behaviors. The combined normative beliefs of various referent others such as family and friends produce social pressure referred to as *subjective norms*. *Perceived behavioral control* (PBC) is the degree to which people believe they can accomplish a specific task. It is also likely to influence the intention to perform such a specific act. Ultimately, TPB suggests that *intention* is the closest antecedent of behavior (Ajzen, 1991), making it tantamount to assuming that a behavior will be performed.

TPB has been applied in many areas of PEB research such as waste reduction, reuse, and recycling (Chan, 1998) and as regards intention to visit green hotels (Chen & Tung, 2014). In the field of fashion, Jain, Khan, and Mishra (2017) examined the purchasing behavior of high fashion consumers using the TPB framework. Subjective

norms had the strongest influence on consumers' intention to purchase expensive fashion brands, followed by attitude. In that same study, PBC had no significant relationship with intention as regards purchasing expensive clothes but showed a strong positive, significant relationship with the actual buying behavior. In general, however, there is a dearth of literature on TPB and PEB in the clothing industry.

The Goal-Framing Theory

Framing is a communication strategy whereby the perception of others toward a certain issue can be influenced, resulting in a change of perception, to which people respond accordingly (Chong & Druckman, 2007). The framing theory suggests that information can be communicated and understood through various perspectives and that the role of communication is seen as key in the effort to invoke behavioral change (Pelletier & Sharp, 2008). Communication was also established to be crucial in making people consider the environmental and societal value of adopting slow fashion (Bolderdijk, Gorsira, Keizer, & Steg, 2013). Consideration of peoples' goals is likewise essential to effect this change in perception and the Goal-Framing Theory (GFT) proposes that goals can frame the way people perceive information. GFT considers three overarching goal frames, namely, hedonic, gain, and normative (Lindenberg & Steg, 2007, 2013).

Hedonic goal pertains to the longing to address the desired feeling or emotional need at a certain point in time (Etienne, 2011). A hedonic goal is a desire for positive feelings such as convenience and pleasure. Hedonic factors have been shown to significantly influence a person's PEB (Lindenberg, 2008). *Gain goals* aim to advance a person's wealth or image and influence people to seek opportunities that maximize their benefits (Etienne, 2011). Gain goals also have a significant influence on PEB depending on how a person thinks about the benefit of acting upon the behavior (Lindenberg & Steg, 2013). When people believe that they will improve their image, they will likely act pro-environmentally (Noppers, Keizer, Bolderdijk, & Steg, 2014). Finally, *normative goals* denote doing the right thing for the common good (Etienne, 2011). Since PEB generally results in social benefits, normative goal frames can become the instrument to promote PEB (Steg & Nordlund, 2012). Studies on fashion and GFT suggest that messages linked with hedonic, gain, and normative goals encourage people to act toward a targeted PEB (Michaelidou & Dibb, 2006; Lindenberg & Steg, 2007). Overall, the three overarching goals of GFT

are important considerations in effectively framing messages to influence people to act pro-environmentally (Gifford & Nilsson, 2014; Petersen & Posner, 2012).

Clothing Involvement and the Effect of Goal Frames on TPB

Clothing involvement refers to the degree of a person's interest to spend on fashion products (Manchiraju & Damhorst, 2016). In line with this, Michaelidou and Dibb (2006) propounded that a person's clothing involvement is predominantly based on the *enjoyment* of shopping, as well as on the *appearance* derived from the symbolic function of clothes. Clothing is a means of self-expression (Piacentini & Mailer, 2004), especially among young middle-class consumers (Jang, Ko, Chun, & Lee, 2012), and encouraging them to move towards sustainable consumption requires much more understanding of behavioral factors regarding clothing involvement (Gwozdz, Nielsen, & Müller, 2017). Considering that a person's clothing involvement is either due to enjoyment or appearance, the effect of each goal frame on TPB constructs could become different as well.

Clothing involvement due to enjoyment (CIE) has a uniquely positive effect on how a person perceives goal frames for PEB. A natural tendency of a person to be involved with activity due to enjoyment (e.g., purchasing clothes, etc.), only makes a hedonic goal frame much more effective in the context of TPB, especially as regards attitude and intention (Botti & McGill, 2011). When a goal frame promotes image, CIE remains an enhancer, as according to Hillhouse, Turrisi, and Kastner (2000), enjoyment reinforces a desire for a positive self-image. Conversely, CIE could weaken how normative goal frame affects TPB since CIE promotes one's enjoyment (Olsen & Skallerud, 2011), instead of the common good, which is the purpose of normative goal frames. CIE generally strengthens intentional antecedents (except only PBC), and according to Ajzen (1991), stronger attitude and subjective norms, result in stronger intention.

Clothing involvement due to appearance (CIA), just like CIE, expectedly has a positive effect on the influence of goal frames towards the PEB under the TPB perspective (Lindenberg & Steg, 2013). When a person buys clothes to make one look good, receiving a message that the shopping activity is pleasurable (hedonic-frame), further strengthens that person's behavioral tendency to shop more often (Lindenberg, 2008). When the theme of a goal frame is about having a good image,

CIA—being consistent with and in favor of one’s image goal (Etienne, 2011)—reinforces the framing effect (Chong & Druckman, 2007). Furthermore, a goal frame for the environment conveying that a positive image could stem from performing PEB such as less frequent shopping for clothes, also strengthen the framing effect (Steg & Nordlund, 2012; Chong & Druckman, 2007). CIA therefore, as an effectiveness enhancer of goal frames on attitude, subjective norms, and PBC, generally leads to an increased level of intention (Ajzen, 1991).

Currently, there is a gap in the literature on understanding clothing consumption using the framing theory and TPB. This research applies GFT and TPB frameworks as approaches to promote the PEB. Within the context of communication, it is important to understand what types of messaging would be influences on reducing frequency of buying clothes. Specifically, this research centers on hedonic, gain, and normative goal-framed messages and establishes its influence on the constructs of TPB intending to move people to shift towards lessening frequency of buying clothes. Furthermore, this study explores whether clothing involvement has a moderating effect on goal frames and TPB constructs. In doing so, a better understanding of how to promote reduced frequency of buying clothes among consumers is obtained.

Research Questions and Hypotheses

Ajzen (1991) proposed that attitude, subjective norms, and PBC influence intention towards behavior. This research extends the TPB by answering the following question: (1) *Do attitudes, subjective norms, and PBC predict intention to reduce frequency of buying clothes?* To this research question, this study proposes the following hypotheses:

- H₁: Attitude significantly and positively predicts intention to reduce frequency of buying clothes.
- H₂: Subjective norms significantly and positively predict intention to reduce frequency of buying clothes.
- H₃: PBC significantly and positively predicts intention to reduce frequency of buying clothes.

Lindenberg and Steg (2007) suggest that GFT can be the most powerful strategy in promoting PEB. In line with this, this study aims to discover how hedonic, gain, and normative goal frames influence the constructs of TPB towards the desired

PEB of reducing frequency of clothing purchases. This study, therefore, also poses the following research question: (2) *Do goal frames influence TPB factors towards reducing frequency of buying clothes?* To this question, this research proposes the following hypotheses:

- H₄: Pleasure (hedonic) frame, image (gain) frame, and environment (normative) frame positively and significantly influence attitude toward PEB
- H₅: Pleasure (hedonic) frame, image (gain) frame, and environment (normative) frame positively and significantly influence subjective norms toward PEB
- H₆: Pleasure (hedonic) frame, image (gain) frame, and environment (normative) frame positively and significantly influence PBC toward PEB
- H₇: Pleasure (hedonic) frame, image (gain) frame, and environment (normative) frame positively and significantly influence intention toward PEB

Michaelidou and Dibb (2006) proposed that understanding clothing involvement is crucial in gaining a deeper understanding of people's purchase of clothing, particularly as it relates to frequency. Thus, the study also aims to answer the question: (3) *Does clothing involvement moderate the influence of goal frames on attitude, subjective norms, PBC, and intention to reduce frequency of buying clothes?* Literature on fashion suggests that people's clothing involvement is based on the enjoyment of buying clothes (CIE), and/or the appearance (CIA) derived as a benefit of purchasing clothes. Thus, cogently, the effect of goal frames on one's attitude, subjective norms, PBC, and intention could be different depending on whether the respondent's clothing involvement is more for enjoyment or more for appearance sake. To the question above, this study proposes the following hypotheses:

- H₈: The influence of goal frame/s (pleasure and image) on attitudes, subjective norms, and intention towards PEB is enhanced by level of CIE.
- H₉: The influence of goal frame/s (pleasure, image, or environment) on attitudes, subjective norms, PBC, and intention towards PEB is enhanced by level of CIA.

The conceptual framework below illustrates the proposed relationships of the various goal frames with antecedents of intention and the final intention to reduce frequency of buying clothes, as well as the moderating effects of clothing involvement.

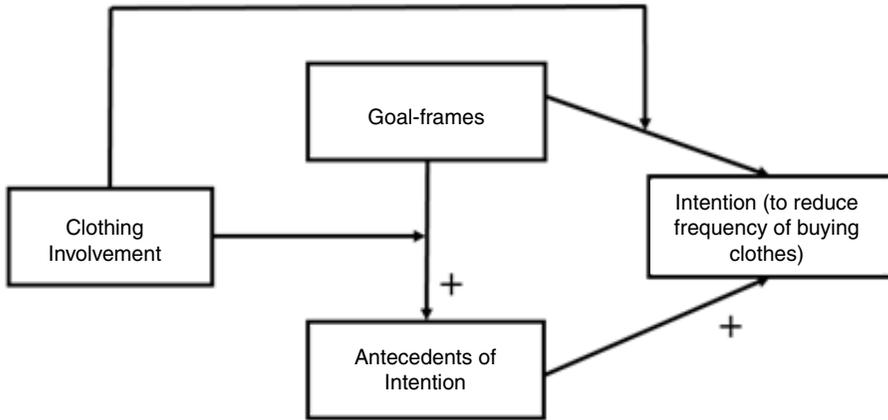


Figure 1: Conceptual Framework

This research considers communication as a key approach toward the pursuit of PEB (Pelletier & Sharp, 2008). It addresses the research gap on determining the influence of goal frames on TPB constructs as it relates to sustainable clothing consumption and seeks to help address the adverse environmental impact of fast fashion's throwaway culture.

METHODOLOGY

Development of Research Materials

Goal frames were developed based on the outcomes of a focused group discussion (FGD) about clothing purchase considerations among six young women. In particular, four messages were developed, i.e., messages supportive of an individual's pleasure, image, or environmental goals as considerations in purchasing clothes, plus one control statement. The messages consisted of approximately 29 to 56 words. Posters (Appendix A) were used to communicate these messages as a poster offers visual exposure, affordability, size flexibility, and the capacity of reaching a wider audience (Wroblewski, 2018). Four posters were utilized and each poster communicated a

different goal frame or the control message. The messages were further tested among 32 participants for the quantitative manipulation checks. Except for the difference in messages, uniformity in the execution of the posters was ensured to avoid bias resulting from differences in the visual elements.

Manipulation Checks

Manipulation checks ensure that each message is perceived uniquely relative to the other messages, and therefore understood the way it is intended for. Through a 5-point Likert scale, each respondent indicated their level of agreement with each of the goal frames. One-way repeated measures of ANOVA were performed to compare the mean scores of pleasure, image, and environmental goal frames to confirm if the message for each was perceived as a goal related to pleasure, image, and environment, respectively. These results are presented in the table below.

Primary Message	N	Mean	Standard Deviation	Wilks's λ
Pleasure M-Pleasure	32	3.59	0.76	
Pleasure M-Image	32	2.31	1.26	.36*
Pleasure M-Environment	32	2.65	1.33	
Image M-Pleasure	32	2.19	0.97	
Image M-Image	32	3.75	0.95	.24*
Image M-Environment	32	2.56	1.32	
Environment M-Pleasure	32	2.25	1.11	
Environment M-Image	32	2.50	1.05	.17*
Environment M-Environment	32	3.81	1.00	

Table 1: Descriptive Statistics and Wilks's Lambda (λ) for Pleasure, Image, and Environment Scores Seen as Primary Message (* $p < 0.05$)

Based on these outcomes, goal frames on pleasure, image, and environment were seen to be significantly different from each other and were understood to be communicating what the message meant to communicate for a particular theme. Manipulation checks respondents were not participants in the main test.

Participants

Survey participants were selected according to three demographic considerations of gender, age, and socio-economic classification. Only females were considered, given that literature on fashion suggests that women are significantly more involved in fashion, shop significantly more often, and have stronger recreational motivation in shopping for clothes than men (Cox & Dittmar, 1995; Chen-Yu & Seock, 2002). Participants included only those born after 1975 (Millennials) and Generation Z. According to Crewe and Davenport (1992), people in these age cohorts generally buy clothes more frequently at low cost but high quantity. Finally, participants included those who classified themselves as middle-class. Generally, the middle-class are those having a stable source of income, living in a decent place, meeting their basic needs, and wants (Atkinson & Brandolini, 2013). Participants were invited to join the survey through a face-to-face approach and invitations. No incentives were given to them and an assurance of confidentiality of their responses was provided. Each participant was asked to sign a consent form at the beginning to document their willingness to participate in the survey.

Setting

The experiments for all of the four clusters of respondents were conducted in the same venue that was convenient for participants and had all the necessities to accomplish the experiment properly. The principal investigator also served as the sole facilitator of the experiments across all of the four clusters of respondents.

Procedure

The research involved 378 young working females. Of these, 350 respondents of age ranging from 18 to 33 years old ($M = 27$, $SD = 1.22$) completed the experiment. In terms of occupation, the distribution is as follows: 5% classified themselves as in a top-level company position, 18% in the middle-level, 28% as independent professionals, 29% as entrepreneurs, and 20% as rank-and-file employees. Each respondent was randomly assigned to one of four experimental clusters. These four are the control cluster, and the three experimental clusters namely, those for the pleasure-frame, image-frame, and environment-frame. Respondents exposed to the control-frame were at 23% (81 respondents), pleasure-frame at 25% (88 respondents), image-frame at 26% (91 respondents), and environment-frame at 26% (90 respondents). For the experimental procedure, each respondent was first required

to complete the questionnaire, after which a poster was shown to them. After seeing the poster, a 10-minute break was given, based on previous research using the framing approach to influence behaviors (Rothman, Salovey, Antone, Keough, & Martin, 1993). Finally, participants were asked to complete the post-questionnaire.

Measures

The study utilized three scales namely the TPB Scale (Ajzen, 1991), the Clothing Involvement Scale (Michaelidou & Dibb, 2006), and the Social Desirability Scale (Crowne & Marlowe, 1960). Reliability tests, factor analyses, and partial correlation were likewise performed to ensure reliability and consistency of these scales with the data collected. Appendix B shows the outcome of pre-tests in table form, providing validity and reliability of these measures.

The TPB scale (Ajzen, 1991) was used to measure a person's attitude, subjective norms, PBC, and intention as applied to frequency of clothing purchase. Participants indicated the degree of their agreement as regards considerations in reducing clothing purchases using a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Analysis of data shows sufficient correlations greater than 0 with the factor correlations showing a sufficient number of $r > 0.3$ establishing factorability of the data. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has a value of .71 suggesting an adequate sample size. The Bartlett's Test of Sphericity was likewise significant at $\chi^2(120) = 355.031, p < .001$. Factor analysis using Principal Axis with Oblimin (oblique) rotation showed a four-factor solution with 15 items, and total variance explained of 74.6%. Reliability analyses were also performed for the 15 TPB-questionnaire items to test for internal consistency. The Cronbach's alpha showed good internal consistency for attitude with five (5) items at $\alpha = 0.88$, subjective norms with three (3) items at $\alpha = 0.97$, and PBC with four (4) items at $\alpha = 0.75$. Finally, intention has three (3) items that have good internal consistency at $\alpha = 0.75$.

The Clothing Involvement Scale identifies the dimensions of clothing involvement that give a deeper understanding of why people buy clothes (Michaelidou & Dibb, 2006). This is a 15-item Likert scale questionnaire that measures clothing involvement as a multi-dimensional construct with these dimensions identified as importance of clothing, enjoyment in buying clothes, interest in clothes, appearance through clothes, and sign value. This study considered *enjoyment* and *appearance* as the most predominant motives in clothing involvement. The analysis for this

purpose indicated that there were significant correlations greater than 0 with the factor correlations presenting a sufficient number of $r > .03$ indicating factorability of the constructs. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy provided a value of .78 suggests an adequate sample size. The Bartlett's Test of Sphericity was likewise significant at $\chi^2(105) = 372.391, p < .001$. Factor analysis using Principal Axis with Oblimin (oblique) rotation through SPSS Version 23 showed a two-factor solution with seven (7) items, and total variance explained of 74.05%. Reliability analyses were also carried out on the fashion involvement factors (enjoyment and appearance) to test for internal consistency. The Cronbach's alpha for the construct on enjoyment with four (4) items was at $\alpha = 0.86$ and for appearance with three (3) items at $\alpha = 0.71$.

Social desirability is defined as the need of people for acceptance by responding appropriately in a given cultural context (Crowne & Marlowe, 1960). This scale serves as an instrument to detect any form of social desirability bias among respondents of a survey that may affect their responses. Partial correlation analysis through IBM SPSS version 23 show zero-order correlations ($r = .004, r = -.032, r = -.059, \text{ and } r = -.080$) indicating that social desirability responses did not have a significant influence on the respondents' answers to the survey.

Data Analyses

In the preliminary analyses, repeated measures of ANOVA, confirmatory factor analyses, reliability analyses, and partial correlation were performed using IBM SPSS version 23 to screen for errors and outliers. Furthermore, descriptive statistics and tests of assumptions have been done.

TPB Factors	Mean	Std. Deviation	Skewness	Kurtosis
Attitude	2.57	1.07	.281	-.569
Subjective Norms	2.49	1.00	.364	-.329
PBC	2.92	1.21	.160	-.890
Intention	2.69	1.11	.385	-.429

Table 2: Descriptive Statistics

Skewness of each TPB factor ranged between -0.5 and 0.5 indicating essentially normal distribution (Tabachnick & Fidell, 2019). Multiple regression was done to examine if attitude, subjective norms, and PBC predict intention to reduce frequency of buying clothes. Furthermore, one-way analysis of covariance (ANCOVA) was conducted to compare the effects of goal frames on attitude, subjective norms, PBC, and intention. Effect size's (η_p^2) interpretations are based on Lakens (2013) where η_p^2 values of 0.01 indicate a small effect, 0.06 as medium effect, and 0.14 as large effect. With the control group as the reference among the dummy coded variables (goal frames), eight hierarchical regression analyses were performed with separate analyses conducted for each of the four TPB constructs (DVs), repeated twice for each moderator variable (CIE & CIA). Main effects, which are the influence of goal frames on TPB constructs were entered in step one, while the interaction terms of goal frames with both CIE or CIA were entered in step two. To probe for significant interactions between goal frames and the moderator variable, simple slopes analysis was performed with conditional values of CIE or CIA as 1 standard deviation (SD) above and below the mean.

FINDINGS

The TPB constructs were confirmed applicable in the context of this study since based on multiple regression, the TPB antecedents predicted significantly and positively the final intention to reduce frequency of buying clothes at $F(1, 554) = 287.90, p < .001$ with attitude ($B = .10, SE = 0.027, p < .05$), subjective norms ($B = 0.78, SE = 0.029, p < .01$), and PBC ($B = .18, SE = 0.026, p < .001$). These results validate $H_1, H_2,$ and H_3 .

Relationships Between Goal Frames and TPB Constructs

A one-way analysis of covariance (ANCOVA) was performed to compare goal frames' effectiveness in terms of strengthening TPB constructs in the context of reducing frequency of buying clothes. Levene's test and normality checks were carried out and assumptions are met with attitude, subjective norms, PBC, and intention scores essentially normally distributed. Results are shown in the succeeding tables.

Attitude	N	Pre-test Mean	Post-test Mean		Effect Size (η_p^2)
			Estimated Marginal Value	Std. Error	
Pleasure-frame	88	2.58	2.76	0.08	0.03
Image-frame	91	2.57	2.75	0.09	
Environment-frame	90	2.40	2.97 ^a	0.09	
Control	81	2.02	2.20	0.09	

Table 3: ANCOVA for Attitude

^aThe post-test mean for environment-frame was significantly different from that of the control group ($p < 0.01$)

There is a significant difference in the post-test attitude scores of the participants under the different goal frames [$F(3, 345) = 5.23, p = .002$] after controlling for pre-test scores. Despite this significant difference, the actual difference in mean scores between the groups was small as the effect size was 0.03. Estimated marginal values showed that the highest score for attitude was associated with the environment-frame ($M = 2.97$), followed by the pleasure-frame ($M = 2.76$), and the image-frame ($M = 2.75$). The post-hoc test using Tukey Honestly Significant Difference (HSD) method showed a significant difference between the environment-frame's and control-frame's ($M = 2.20$) influence on attitude, $p < 0.01$. Results also show the environment-frame score as significantly different from those of the pleasure-frame and the image frame, $p < 0.05$. There was no significant difference in scores between the pleasure-frame and the image frame. Such outcomes therefore partially accept H_4 , i.e., environment frame positively and significantly influence attitude.

Subjective Norms	N	Pre-test Mean	Post-test Mean		Effect Size (η_p^2)
			Estimated Marginal Value	Std. Error	
Pleasure-frame	88	2.39	2.54	0.08	0.06
Image-frame	91	2.48	3.93 ^a	0.07	
Environment-frame	90	2.29	2.75 ^a	0.07	
Control	81	2.09	2.04	0.08	

Table 4: ANCOVA for Subjective Norms

^aThe post-test means for the the image-frame and the environment-frame were significantly different from that of the control group ($p < 0.05$)

There is a significant difference in the post-test subjective norms scores of the participants under the different goal frames [$F(3, 346) = 4.40, p = .005$] after controlling for pre-test scores. The results suggest a medium effect size at 0.06. Estimated marginal values showed that the highest score for subjective norms was associated with the image-frame ($M = 3.93$), followed by the environment-frame ($M = 2.75$), and the pleasure-frame ($M = 2.54$). The post-hoc test using Tukey HSD yielded significant differences between the image-frame's, environment-frame's, and control-frame's ($M = 2.04$) influence on subjective norms, $p < .001$. Results also show the environment-frame score as significantly different from those of the pleasure-frame and the image frame, $p < 0.05$. Likewise, there was a significant difference in scores between the pleasure-frame and the image frame, $p < 0.05$. These outcomes partially accept H_5 , i.e., image-frame and environment-frame positively and significantly influence subjective norms.

PBC	N	Pre-test Mean	Post-test Mean		Effect Size (η_p^2)
			Estimated Marginal Value	Std. Error	
Pleasure-frame	88	2.56	2.76	.10	0.03
Image-frame	91	2.89	3.09	.10	
Environment-frame	90	2.78	2.98	.09	
Control	81	2.09	2.29	.09	

Table 5: ANCOVA for PBC

There was no significant difference in the post-test PBC scores of the participants under the different goal frames [$F(3,346) = 2.00, p = .118$] after controlling for pre-test scores. Estimated marginal values showed that the highest PBC score was associated with the image-frame ($M = 3.09$), followed by the environment-frame ($M = 2.98$), and the pleasure-frame ($M = 2.76$). Although there were significant differences between the scores of the various frames, the post-hoc test using Tukey HSD yielded no significant differences between the control-frame and all other goal frame's effectiveness ($p = .07$) in affecting PBC. Such outcomes therefore completely reject H_6 .

Intention	N	Pre-test Mean	Post-test Mean		Effect Size (η_p^2)
			Estimated Marginal Value	Std. Error	
Pleasure-frame	88	2.50	2.67	0.09	0.05
Image-frame	91	2.51	2.68	0.08	
Environment-frame	90	2.41	2.58	0.08	
Control	81	2.13	2.40	0.09	

Table 6: ANCOVA for Intention

There was no significant difference in the post-test intention scores of the participants under the different goal frames [$F(3,346) = 2.45, p = .063$] after controlling for pre-test scores. Estimated marginal values showed that the highest score for intention was associated with the image-frame ($M = 2.68$), followed by the pleasure-frame ($M = 2.67$), and the environment-frame ($M = 2.58$). The post-hoc test using Tukey HSD yielded no significant differences between the control-frame and all other goal frame's effectiveness ($p = .11$) in affecting intention. These results point to the complete rejection of H_7 .

Moderating Effect of Clothing Involvement on the Influence of Goal Frames on TPB Constructs

Moderating effects of clothing involvement on the significant relationships between the dummy-coded goal frames and TPB factors were also tested using hierarchical regression analyses. Based on results, the image-frame's effect on subjective norms is significantly moderated by CIE at $R^2 = .16, p < .001$. To further explore this significant interaction, slopes analysis was performed. Step one of the regression model was significant, $F(1, 146) = 12.32, p < .001, R^2 = .20$. The image-frame significantly predicted subjective norms ($\beta = 0.55, SE = .07, p < .05$) and exposure to image-frame was associated with a 0.55-degree increase in subjective norms. Step two of the regression model was significant, $F(2, 145) = 6.87, p < 0.001, R^2 = .24$. Results showed statistically significant interaction between the image-frame and CIE ($p < .001$). As a result of this interaction, the image-frame showed greater influence on subjective norms ($B = 0.71, SE = 0.17, p < 0.001$) at high-level CIE 1-SD above the mean, while at low-level CIE 1-SD below the mean, the image-frame showed weaker influence ($B = 0.44, SE = 0.17, p < 0.001$). Such outcomes partially validate H_8 (CIE

leads to stronger influence of image-frame on subjective norms). CIA, on the other hand, established no significant moderating effect $R^2 = .01$, $p = .32$ on goal frames influence on TPB factors, thus completely rejecting H_9 .

DISCUSSION

In summary, this research adds to existing literature with its three significant findings: (1) It validates TPB in the context of PEB, specifically as it relates to reducing frequency of buying clothes; (2) it provides support for GFT and its utility towards shaping people's intention towards a specific PEB; and (3) it establishes the moderating effect of the type of clothing involvement on the relationships between goal frames and TPB constructs. The succeeding discussions provide insights into the significant findings of this study.

Applicability of TPB in Reducing Frequency of Buying Clothes

The results support the TPB as it applies to PEB as they show that respondents' attitudes, subjective norms, and PBC positively and significantly correlate to intention towards reducing the frequency of buying clothes. This means that the more positive is one's attitude towards PEB, the more likely it is that one would reduce frequency of buying clothes. It appears too that the more people feel that other persons significant in their lives find PEB to be important, the more likely it is that they would try to buy fewer clothes. And finally, the more that people feel they have control over their PEB, the more likely would they lessen their frequency of buying clothes. The relationship of attitudes, subjective norms, and PBC to intention to reduce frequency of buying clothes then suggests that deliberate efforts may be necessary to influence consumers along these parameters.

Significant Influence of Environment-Frame on Attitude

As a normative goal, the environment-frame promoted that by purchasing fewer clothes, one can help minimize waste from having too many clothes that are not needed. This relationship is crucial as a positive attitude towards a particular behavior, arguably, has a longer-lasting effect. If a person feels that doing a certain activity is right, meaningful, and for the greater good, then greater zeal and more deliberate efforts to act upon it can be expected. Delivering a message supportive of environmental welfare would then be a concrete way to lead to PEB that is

sustainable and enduring. However, the small effect size result may indicate that the strength of the association between the environmental frame and attitude may not be that strong.

Significant Influence of Image-Frame and Environment-Frame on Subjective Norms

The image-frame proposed that one can buy fewer clothes to benefit the environment and still look fashionable at the same time. The *image-frame* has a significant influence on how participants give importance to what others think of them, or their subjective norms with a medium effect size. The message that PEB is consistent with being seen as fashionable may have made participants realize that showing environmental concern and responsibility is not inconsistent with being seen as fashionable. On another aspect, the *environment-frame* conveying that purchasing clothes less frequently would minimize wastes, suggests that emphasizing the targeted PEB as a norm would work sufficiently since the result showed a significant influence with a medium effect size. In support of this argument, Huang (2016) suggested that encouraging PEB by showing it as highly socially accepted, such as through social media, prompts greater environmental actions and encourages consistency of these actions.

Non-Significant Influence of Goal Frames on PBC

This result established that no goal frame significantly affected PBC. In the context of buying clothes, it means that PBC over frequency of buying clothes is not influenced by any of the goal frames. Related studies support such finding, wherein PBC was found to be influenced more by internal factors rather than externalities such as outside messages (Kidwell & Jewell, 2003; Lee & Park, 2007). Based on their research, shopping behavioral control, particularly for fashion products, was only significantly correlated with internal influences including self-mastery and mental health factors.

Non-Significant Influence of Any of the Goal Frames on Intention

Based on the results, goal frames did not directly affect the participants' intention to perform the PEB. In reference to literature, the way by which goal frames were formulated may have something to do with this result. In this research,

the frames highlighting goals achievement, including pleasure of shopping, image enhancement, and environmental protection, were all formulated with the purpose of promoting PEB. However, such positive goal frames can work less effectively compared to negative goal frames (conveying non-achievement of a goal) to influence people's intention (Krishnamurthy, Carter, & Blair, 2001). Furthermore, these findings also support TPB which establishes that influencing intention is not done directly but through the routes of attitudes, subjective norms, and PBC.

Moderating Effect of CIE on the Influence of Image-frame on Subjective Norms

Receiving a message that a PEB, particularly less frequent buying of clothes, would not be inconsistent with having a fashionable image, encourages the intention towards that PEB as a form of conformance to other people's expectations. Results show that if a person's clothing involvement is for enjoyment, the more likely would that person link the purchase of clothes to what other people think. It would indicate that the enjoyment of shopping does not necessarily translate to buying more clothes but would translate perhaps to more discerning purchases that would be consistent with the expectations of others. This finding is particularly interesting as it challenges the common impression that people who enjoy shopping would quite likely purchase clothes more often. It seems that clothing involvement as a form of enjoyable activity would not be inconsistent with less frequent purchase of clothes for environmental reasons.

No Moderating Effect of CIA on Goal Frames Influence on TPB Constructs

CIA was hypothesized as having a moderating effect on goal frames' influence on attitude, subjective norms, and PBC. However, findings proved otherwise. This means that the relationship of these three constructs with the intention of buying less clothes does not depend on clothing involvement that is image-related. This result can be seen as surprising given that the image-frame significantly influenced subjective norms. It can be surmised, however, that CIA may relate more to one's image in terms of self-expression or as a projection of social status and, thus, have little influence on one's intention to perform PEB.

Managerial Implications

Given adverse environmental consequences of fast-fashion, this study suggests that messages, when associated with consumers' goals on fashion, could be influential in moving them towards reducing their frequency of purchase for clothes. Among all the message frames studied, an image-frame could more effectively influence people to lessen frequency of clothing purchase given its effect size relative to subjective norms. Such communication route may be the most appropriate when talking to younger people who are the biggest purveyors of fast fashion and who value what other people think of their behaviour. The image-framed message would perhaps be even more effective for young people who consider fashion as one of the considerations in classifying people on a social level. Generally, when people believe that they will improve their image, they will likely act pro-environmentally. In addition, it appears that focusing on young people whose clothing involvement is for enjoyment may further spur efforts towards decreasing clothing purchases.

From a different perspective, it can be argued that awareness of the effect of fast fashion on the environment is not yet as salient in the minds of consumers as plastic consumption or waste recycling (Ozdamar-Ertekin, 2017). Awareness can therefore be generated through an environment-frame that clearly communicates the negative environmental impact of fast fashion. This is important as this kind of message is the only frame that influenced attitude and could be an effective way to communicate to consumers who have the ability and freedom to shift into more sustainable clothing purchase habits through reduced purchases. A change in attitude towards frequent purchases of clothes is expected to have a longer-lasting effect on the person's purchase behavior. Furthermore, use of an environmental frame would not just potentially influence attitude but could also be used to influence subjective norms. An environmental message could have a strong impression on the youth who are influenced by their significant others' perception of the environment.

Conclusively, communication through goal frames is pivotal in influencing people to think of the environment in terms of clothing purchase considerations. It is hoped that these findings could be useful for green marketing efforts as a starting point on what messages can be used to help drive down demand for fast fashion.

Limitations and Areas for Future Research

The current study only includes young female workers and, as such, cannot be representative of the total population. The correlation values of attitude, subjective norms, and PBC with intention may be inflated because of shared method variance, given that measures for all the TPB constructs were derived from the same questionnaire. The cross-sectional nature of these relationships is also a limitation. Furthermore, this study can only help predict participants' intention to reduce their clothing purchases but not the actual behavior of buying less clothes. Moreover, this study only attempts to understand the environmental challenges of fast-fashion from consumers' perspectives without considering manufacturers' considerations. For future studies, researchers can look at both manufacturers' environmental and social considerations, particularly ethical labor practices. Goal-framed messages on pleasure, image, and environmental protection could also be tested for difference between traditional and online shopping. Future research may also consider other goals depending on the desired PEB and target population, and/or expand study coverage to respondents from other age brackets and gender classifications.

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APPENDICES



People buy more clothes now because of low-cost clothing that imitate luxury fashion brands. Referred to as Fast Fashion, it contributes to depletion of resources and creates more wastes.

Buying less clothes would be beneficial to the environment. If you enjoy shopping, the pleasure can still be experienced by being more selective about the clothes you buy.

Pleasure-frame



People buy more clothes now because of low-cost clothing that imitate luxury fashion brands. Referred to as Fast Fashion, it contributes to depletion of resources and creates more wastes.

Buying less clothes would be beneficial to the environment. Yet you can still continue to have a fashionable image and be seen as selective in terms of taste.

Image-frame



People buy more clothes now because of low-cost clothing that imitate luxury fashion brands. Referred to as Fast Fashion, it contributes to depletion of resources and creates more wastes.

Buying less clothes would be beneficial to the environment. In particular, you will help minimize waste coming from having too many clothes that are not really needed.

Environment-frame



Control-frame

Appendix A: Goal-frame Posters

	Factor		
	Enjoyment	Appearance	Communality
CIE2	.953		.935
CIE4	.861		.782
CIE3	.799		.643
CIE1	.741		.649
CIA2		.930	.877
CIA3		.825	.786
CIA1		.568	.397
Cronbach's Alpha	.860	.710	

Appendix B1: Construct Validity and Reliability of Measures. Clothing Involvement Scale (CIS) Factors, Principal Axis Factoring, Oblimin with Kaiser Normalization Rotation, Pattern Matrix for 7 CIS Items (N=350). Note: Factor loadings < 0.4 are suppressed.

	Factor				
	Attitude	PBC	Subjective Norms	Intention	Communality
A4	.950				.983
A2	.937				.966
A5	.928				.977
A1	.870				.984
A3	.828				.928
P2		.982			.966
P4		.962			.956
P3		.832			.951
P1		.816			.942
S4			.964		.977
S1			.905		.986
S2			.858		.937
I3				.966	.964
I1				.901	.989
I2				.900	.983
Cronbach's Alpha	.880	.750	.970	.750	

Appendix B2: Theory of Planned Behavior Factors, Principal Axis Factoring, Oblimin with Kaiser Normalization Rotation, Pattern Matrix for 15 TPB Items (N=350). Note: Factor loadings < 0.4 are suppressed.

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