

# From Likes to Lives: How Social Media Shapes Sustainable Consumption Choices

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**Title**

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**Abstract**

The study investigates the relationship between the engagement in two large English-language online communities on Facebook and Reddit dedicated to sharing green-living tips and promoting sustainable consumption (SC) among their members. The estimated structural equation model suggests a positive impact of social media engagement on SC change, with mediation by intrinsic and extrinsic motives for sustainable behaviour, as well as moderation by homophily (reflecting perceived similarity between an individual and other group members). The model also accounts for the influence of environmental attitude as well as personal characteristics of respondents, including gender, age, income, education and time spent as a member of the social network. The findings indicate that the most important factor in inducing SC changes is perceived homophily with other members of the social group.

**Keywords**

Sustainable consumption, social media engagement, homophily.

**This paper is intended for the track Social Responsibility & Ethics**

## **1. Introduction**

Sustainable consumption (SC) involves using products and services in ways that minimize environmental impacts, fulfilling current human needs while also ensuring the needs of future generations are met (Jansson & Marrell, 2017). Past research suggests that social influence can play an important role in shaping consumption patterns through mechanisms such as herd behaviour, social learning and peer pressure (Tarabashkina, 2022). At present, much of consumers' social interactions have shifted to the Internet, particularly on social media networks (SM) such as Facebook, Reddit, Instagram, and TikTok.

Within this context, our research explores the interconnections between SM engagement and the shift towards sustainable consumption among participants of two large international online communities on Facebook and Reddit. We aim to uncover the extent to which behavioural change occurs due to involvement in a SM group focused on sustainability. Additionally, we aim to identify factors that can induce SC, such as perceived similarity among group members (homophily), environmental attitudes, intrinsic and extrinsic motivations, SM group membership duration, as well as individual traits. To the best of our knowledge, this study is the first attempt to investigate this research topic based on original empirical data sourced from SM users. Consequently, our study not only fills a gap in theoretical understanding but also offers practical guidance for businesses, NGOs, and governmental entities aiming to enhance the efficacy of their communication strategies by utilizing social media channels.

## **2. Literature review**

The concept of engagement is crucial in understanding consumer behavior patterns on social media (SM). It represents a spectrum of both passive and active participation in online communities (Amaro, 2016). Higher levels of engagement often involve active relationship-building with other users through direct communication. In contrast, those less involved may limit their interaction to reading posts and engaging with content via likes on Facebook and Instagram or upvotes on Reddit. SM groups typically form around specific interests (Carpenter et al., 2016). Among these, communities focused on sustainability often unite around environmental activism (Pickerill, 2001), aiming primarily to reduce the negative environmental and societal impacts of their members' actions (Kollmuss & Agyeman, 2002).

Prior research has emphasized that a key reason behind individuals not adopting sustainable and responsible behaviors is their lack of understanding of the negative environmental and social impacts resulting from their actions (Kollmuss & Agyeman, 2002).

As a result, increased engagement in sustainability conversations on SM has the potential to heighten awareness of sustainability issues, prompting positive changes in behavior (Stieglitz & Dang-Xuan, 2013). Therefore, we propose the following hypothesis:

**H.1** Social media engagement is positively associated with sustainable consumption change.

Extrinsic motivations involve seeking external reinforcement or social recognition, such as economic success, image, or popularity, and are often driven by external rewards or outcomes (Vansteenkiste et al., 2004). In contrast, intrinsic motivation, which Deci & Ryan (1985) consider the highest form of self-determination, characterizes behaviors pursued for the inherent pleasure and satisfaction they provide. Intrinsic motivations directly fulfill psychological needs and include aspects such as relationships, autonomy, competence, self-acceptance, affiliation, and a sense of community or health (Taberero & Hernández, 2011).

Increasing evidence suggests a positive link between engagement in social media (SM) and both intrinsic and extrinsic motivations for sustainable behavior (Peeters & Kuppens, 2020; Lee & Park, 2020). Therefore, we propose the hypotheses:

**H.2** Social media engagement is positively associated with intrinsic (**H.2.1**) and extrinsic (**H.2.2**) motives for sustainable behaviour.

**H.3** Intrinsic (**H.3.1**) and extrinsic (**H.3.2**) motives for sustainable behaviour serve as mediators in the relationship between social media engagement and sustainable consumption change.

Homophily, a central concept in this study's framework, refers to the grouping of individuals based on shared attributes. This principle underlines the extent to which interacting individuals are similar in aspects such as beliefs, values, education, and social status (Rogers & Bhowmik, 1971). In the context of SM, homophily pertains to the tendency of users to connect with others who possess similar characteristics. It can influence relationships both in real life and online, with its impact arguably more pronounced in digital spaces. Online, users often have a more favorable view of and are more likely to engage with those who resemble them, showing interest in their activities and following their posts (Onofrei, 2022). It can be argued that increased consumer interaction on SM is driven by encountering individuals with shared values, attitudes, and preferences (Shan, 2016). Based on this understanding, we propose the following hypotheses:

**H.4** Social media homophily is positively associated with social media engagement (**H.4.1**), and moderates the relationship between social media engagement and motives for sustainable behaviour (**H.4.2**) as well as sustainable consumption change (**H.4.3**).

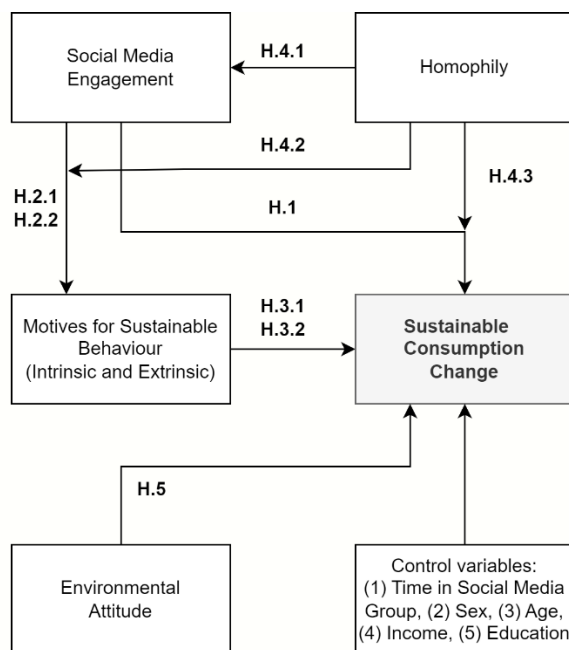
Environmental attitude are beliefs of individuals and the society in relation to nature, ecology, and environmental issues (Green-Demers, Pelletier, & Menard, 1997). It is a psychological tendency to assess the natural environment with a certain degree of favor or disfavor (Milfont & Duckitt, 2010). Environmental attitudes are associated with personal norms, perceived responsibility, and pro-environmental and prosocial engagement, all of which can impact sustainable consumption behavior (Čapienė et al., 2022). This suggests that intrinsic (Heller & Vatn, 2017; Silvi & Padilla, 2021) and extrinsic motives may have a moderating effect in the relationship between environmental attitudes (Legault & Pelletier, 2000) and SC choices. With this in mind, we put forward the hypotheses:

**H.5** Environmental attitude is positively associated with intrinsic (**H.5.1**) and extrinsic (**H.5.2**) motives for sustainable behaviour, and with sustainable consumption change (**H.5.3**).

Additional elements of the conceptual model are control variables involving personal characteristics of respondents as well as the time a person was a SM group member. These concepts are not central to the study and were accounted for to avoid endogeneity issues that could result in spurious correlations. As such, we opted to include them in statistical calculations but without creating dedicated hypotheses.

Figure 1 offers a visual representation of the research hypotheses, providing a concise overview of the study's scope and aims.

**Figure 1:** Conceptual framework of the study



Source: Own elaboration

### **3. Research methods and collected sample**

In this study, the digital questionnaire incorporated four reflective constructs: homophily, intrinsic motives, extrinsic motives, and income. Additionally, it included two formative constructs: social media (SM) engagement and sustainable behavior change. Unless otherwise indicated, the questionnaire utilized Likert scales with six response options.

The scale for SM engagement was based on previous works by Amaro et al. (2016), Onofrei et al. (2022), Baldus et al. (2014), and Paruthi and Kaur (2017), consisting of 11 items. Examples of these items include "I use this Facebook/Reddit group to read about the experiences of others" and "I interact with others in this Facebook/Reddit group to share tips and experiences." Homophily was assessed following the approach of Filieri et al. (2018), Gilly et al. (1998), and Onofrei et al. (2022), with five items such as "The people in this Facebook/Reddit group have similar likes/dislikes to mine" and "The people in this Facebook/Reddit group share my values."

Environmental Attitude was measured using an 8-item Likert scale developed from Pilgrimene et al. (2020) and Dunlap et al. (2000), with items like "Plants and animals have as much right as humans to exist."

The metrics for measuring intrinsic and extrinsic motives for sustainable behavior comprised 8 and 7 items, respectively. These were adapted from Pelletier et al. (2008), Grønhøj and Thøgersen (2017), Clary et al. (1998), and Li et al. (2018). Examples of these items are "Taking care of the environment makes me feel better about myself" and "I appreciate the recognition I receive from others when I take care of the environment."

Sustainable Consumption Change was assessed using 13 statements derived from research by Pilgrimene et al. (2020), Tanner and Kast (2003), Salonen et al. (2014), Pelletier et al. (2008), and Minton et al. (2012). These statements covered a variety of sustainable activities, such as "I seek to reduce the overall number of purchases I make to help the environment" and "When choosing among similar products, I select the one which is more environmentally friendly." Respondents were asked to report whether their participation in these actions had increased, decreased, or stayed about the same since joining their respective SM groups.

The data collection was conducted using the Computer-Assisted Web Interviewing (CAWI) method in December 2022. Participants were drawn from two large, English-speaking online communities focused on sustainability and eco-friendly lifestyle discussions:

- r/sustainability – a Reddit group with 353 thousand members, from which 171 participants were sampled,
- Sustainable Living – a Facebook group with 134 thousand members, contributing 146 participants.

Study invitations were posted as highlighted posts on the groups' pages to ensure visibility to all members visiting these sites. Each member could click the provided link to access and complete the questionnaire.

In total, 317 valid responses were gathered. The demographic and other relevant characteristics of the sample are detailed in Table 1.

**Table 1.** Characteristics of the study's sample

<u>Gender</u>	<u>Age</u>	<u>University diploma</u>	<u>Number of sustainable consumption changes</u>
Males: 23.03% Females: 76.97%	18-24: 16.72% 25-34: 36.28% 35-44: 18.61% 45-54: 15.46% 55-64: 10.09% 65+: 2.84%	Yes: 40.06% No: 59.94%	0: 53.94% 1: 13.25% 2: 7.26% 3: 8.20% 4: 6.62% 5: 3.79% 6: 2.21% 7: 1.89% 8 and more: 2.84%
<u>Time spent as a member of this social group</u> < 1 month: 4.42% 1-3 months: 8.83% 4-6 months: 18.30% 7-12 months: 24.61% 1-2 years: 23.97% 2-3 years: 16.09% >3 years: 3.79%	<u>Financial standing</u> (means for Likert items scaled from 1 (strongly disagree) to 6 (strongly agree)) 1. I could easily handle an unexpected expense of \$300: 3.6 2. I can enjoy my life because of the way I'm managing my money: 4.1 3. Because of my money situation, I feel like I will never have the things I want in life: 2.3 4. I have money left at the end of the month: 4.3		

Source: Own elaboration

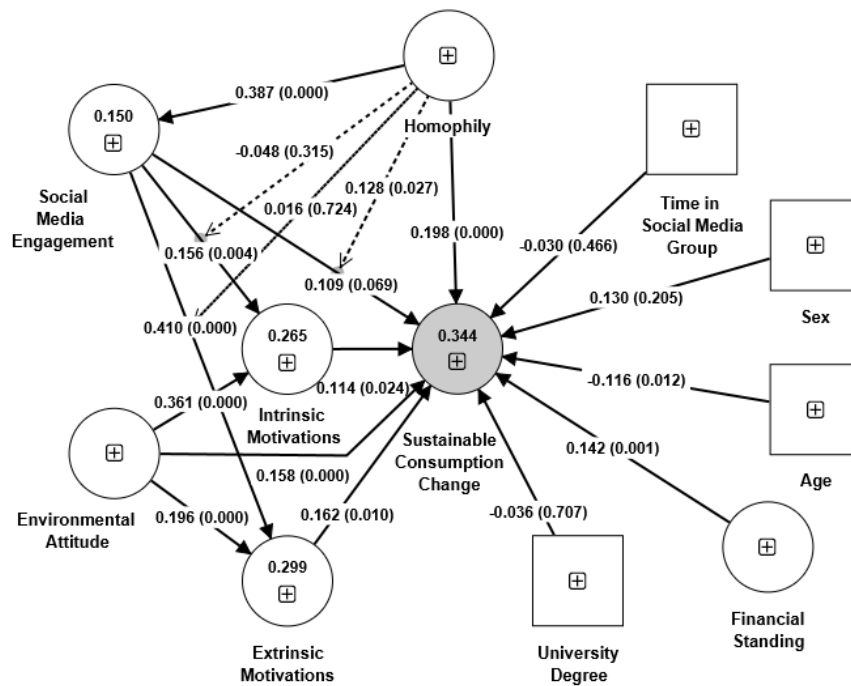
Statistical analysis involved estimating a PLS structural equation model with the SmartPLS 4.0 software.

#### 4. Research results

The structural equation model's quality was validated by examining standard reliability and validity metrics, following the recommendations of Hair et al. (2018). All pertinent metrics met acceptable thresholds. Each reflective construct explained over 50% of the variance in its indicators, demonstrating good reliability (Hair et al., 2007, p. 605). Moreover, these constructs showed stronger correlations with their indicators than with other constructs in the model, thus satisfying the Fornell-Larcker criterion for discriminant validity (Fornell and Larcker, 1981). Due to article length limitations, detailed analysis results are not included but can be obtained upon request from the corresponding author.

With the SEM solution's measurement model validated, the focus shifts to the inner model, which illustrates the relationships between latent variables. Figure 2 facilitates this exploration by presenting standardized regression weights and p-values obtained from a bootstrap procedure utilizing 5000 subsamples. The numbers within the circles indicate the variance proportions in the respective endogenous variables accounted for by the model. Square shapes in the figure denote measurable variables, while circles represent latent constructs.

**Figure 2.** Standardized regression weights and p-values for the study's structural equation model



Source: Own elaboration

Table 2 complements Figure 2 by detailing the total effects among variables within the model. It specifically focuses on instances where these complete effects differ from their direct impacts, capturing all relevant mediation effects.

**Table 2.** Direct and total effects between pairs of variables in the model

Regression paths	Direct effects		Total effects	
	Standardized regression coefficients	P values	Standardized regression coefficients	P values
SM Engagement -> Sustainable Consumption Change	0.109	0.069	0.194	0.000
Environmental Attitude -> Sustainable Consumption Change	0.158	0.000	0.230	0.000
Homophily -> Extrinsic Motivations	0.113	0.026	0.272	0.000
Homophily -> Intrinsic Motivations	0.206	0.000	0.266	0.000



Homophily -> Sustainable Consumption Change	0.198	0.000	0.315	0.000
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Source: Own elaboration

Figure 2 shows that the structural equation model explains 34.4% of the variance in sustainable consumption change (SCC), with significant contributions from all hypothesized predictors. Among the five control variables only age and financial standing were significantly correlated with SCC. The standardized regression coefficients for total effects, as listed in Table 2, identify homophily (0.315), environmental attitude (0.230), and social media engagement (SME; 0.194) as the three most influential determinants of SCC.

The model confirms the anticipated positive influence of SME on SCC, observable through both the direct links and the mediation of intrinsic and extrinsic motivations. Notably, the pathway involving extrinsic motivations is more pronounced than that for intrinsic motivations. This difference may be due to the social pressures inherent in online community participation, which tend to heighten external behavioral motivations over internal ones. These findings clearly support the hypotheses H.1 and H.2.

Both intrinsic and extrinsic motives show positive associations with SCC, with extrinsic motives having a more pronounced impact. As SME positively correlates with both motivation types, two significant regression pathways link SME to SCC, indicating partial mediation, as SME also retains a statistically significant direct link with SBC. Consequently, hypotheses H.3.1 and H.3.2 are validated.

Homophily's role within the model was more significant than initially expected. It positively correlates with SME, indicating that individuals who identify with their community peers are likely to show greater dedication and engagement. Furthermore, homophily was found to positively interact with the relationship between SME and SCC consistent with this formula:  $SBC = (0.109 + 0.128 * \text{homophily}) * SME$ . Given that latent variables in the model are standardized (mean = 0, standard deviation = 1), one standard deviation increase in homophily more than doubles the average strength of the correlation between SME and SCC. Indeed, higher levels of homophily beyond the average strengthen the relationship between SME and SCC, whereas homophily below the mean weakens this association. Besides its moderating role and indirect connections with SCC, homophily is having a direct positive impact on how much respondents change their behaviour to more sustainable and environmentally friendly. Thus, homophily emerges as a key factor in behavioral change, supporting hypotheses H.4.1 and H.4.2. However, the lack of significant moderation between intrinsic and extrinsic motives and SCC contradicts H.4.2.

Environmental attitude correlates positively with both extrinsic and intrinsic motives (more strongly with the latter) and exhibits a significant direct link with SCC, supporting the partial moderation effect anticipated in hypotheses H.5.1 to H.5.3.

Most individual characteristics of respondents, such as sex and education level, were not significant predictors of SCC. This suggests that these factors do not notably influence variations in sustainable consumption behaviors. However, wealthier and younger individuals reported more significant changes in their behavior patterns, highlighting the role of socioeconomic status and age in sustainable consumption.

These findings offer practical insights for socially oriented businesses and NGOs focusing on sustainability promotion. They highlight the effectiveness of fostering cohesive social communities as a strategy for encouraging behavioral changes. However, the key to success appears to be the level of homophily among group members; lower homophily levels may lead to minimal behavioral impact or even patterns contrary to expected ones, as demonstrated by the interaction between homophily and the SME-SCC link.

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