Complexities of Sustainable Marketing in the Shadows of Climate Change

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ABSTRACT

The transforming sustainable—buying behavior and awareness among the active community of 4.54 billion social media users (59% of the Global population) and their concerns over the issue of Climate Change, environment-friendly practices, biodegradable packaging, safe and human-grade products, and services appeal to the sensitivity and culture of the digitized platform users. The online survey method was used to collect data from 482 participants via an online questionnaire. This study derived data from an ethically/commercially motivated online survey (n = 482) (used PLS-SEM Modeling for the analysis of complex latent variables) from the UK, USA, Canada, Pakistan, and Saudi Arabia, to discover general domestic buying/consumption patterns and preferences; most narrowly related with the concern/responsibility/awareness of disruptive climate change. The study's findings established positive relationships between Clients and conceptions patterns of everyday buying for contributing to climate change and environment-related consumer buying practices. The study suggests both challenges assumed wisdom about environment-related user behavior patterns and suggest future projected gaps for 2030-2050 for future research. The experts' perspectives offer an inclusive chronicle on vital facets of this imperative topic as well as views on related issues plus artificial intelligence, driven social and digital Green Marketing complexities, gaps, and limitations in the contemporary research, bonding Green Marketing with buying complexities, climate change and especially clients transformed online buying behavior.

Key Words: Green Marketing, Climate, Sustainability, virtual markets

1 INTRODUCTION
1.1 Complexities of Green Marketing

Internet connectivity, AI, and social media platform curve have added diversity and geographical depth to globalization, stimulated significant growth and carved eco-friendly awareness, and devised sustainable changes in economic growth, corporate law, health care, and human and machine interface psychology (Dauvergne, P. 2020). The innovative graft of Metaverse tech-AI-3D integrated Application developed by Facebook; it would reshape many aspects of human life and society, crafting contemporary trends of online shopping, advertising, and business culture and would promote the pragmatic idea of Eco-friendly practices and digital planet Earth (Allam et al., 2022). Social media platforms of 4.54 billion connected buying, business, and Green Marketing communities symbolize a different world and digitized community from a different planet adopting change business culture, and greater climate awareness. A critical phenomenon surrounding human life as a continuum is Online-Clients-Purchasing-indulgence (GREEN OCPI). Online Purchasing is associated with Green sustainable—marketing for regulating the economy; Green digital marketing has netted more than 51% of the customer from Shopping-Malls to Online-Connected-Mobiles. 21st-century clients with online buying obsession have changed capitalism for innovative spending activities, which may be well-received; on the other hand, offline-retailers have lost business by up to 51%, which amply reflects customers' changing to digitized sustainable—

buying behavior.

Rockström et al. (2009) stated that the climate change challenges command specific Consumer obligation, a significant impact on buyer conducts that marketers and policymakers may design to harness as they attempt to respond to environmental challenges such as carbon footprint and GHG emissions. The variations in clients' green purchasing culture, future projections, and competitions have implied that entrepreneurs and businesses are discovering and crafting new green products to connect and serve clients' ecological-friendly shopping behavior and Businesses must adopt practices that reduce their carbon footprint. Those who do not comply with these changes will become weaker and eventually fail. Customers before making any major purchase go through five distinct stages that are "recognition of problem, searching for relevant information, alternative evaluation, decision about making purchase, and post-purchase behavior." However, buyers may skip or repeat some of these stages (Moustakas, 2015).

It is projected that emergent technology and AI will remodel lifestyles, avert Climate Change, and may bring things to normal by 2050. The comprehension of the time curve from the 1700 Industrial Revolution to1900 took two hundred years to understand climate change (Pink, 2022). Since climate change and rising temperatures, the curve was established in 1900; many restoration theories and innovative technologies are on track to combat climate change and mitigate carbon footprint by 2030-2050. It is projected that were incorporated. It is now projected that emergent technology and AI would remodel lifestyle, avert Climate Change, and may bring things to normal by 2050. The comprehension time curve from the 1700 Industrial Revolution to1900, took two hundred years to understand climate change. Since climate change and rising temperatures, a curve was established in 1900; many restoration theories and innovative technologies are on track to combat climate change and mitigate carbon footprint by 2030-2050 (Pink,2022). But it does demand a few commitments in connection with brands that supply to Clients the one disbelieving the guest's real purposes marketed as environmental. The extra worth adding will not go pointless either; larger price tags forbiddance alarm shoppers whose credence arrangements are joined accompanying sustainability. Seventy percent of these Clients will pay higher prices for environmental output. It is projected that there is a \$2.65 trillion marketplace allocated to eco-friendly products. This opportunity presents over \$1 trillion in openings for firms that position their products with sustainable features. The complexities of marketing have not increased manifolds, but need change, re-alignment, and reinventing the marketing discipline and practices as the conventional marketing approach would not work any longer (Xhema, 2019; Augustinus, & Agnes, 2020).

2. RESEARCH AIMS & OBJECTIVE

The complexities of 21st-century Marketing, Clientele Consumption patterns and Climate Change have transformed the face and nature of contemporary research with a narrow focus on the context of international Green Marketing management and shaping eco-friendly 180 degrees traversed consumer buying behavior. This structural equation modeling (SEM) and mixed hypothesis research will examine the construct of derived hypotheses about Complexities of Green Marketing and Clients transforming shopping indulgence in the shadows of 21st-century climate change and commercial-metaverse-tech intricacies; how and what economic and ecological-complexity differs in nature, along with human skilled-resource, Metaverse-tech---awareness and max industrial expertise are central to the total dynamic of environment-friendly industrial-output, overseas investments. The future online buying and trade directness may lead to per capita reduced CO2 emissions levels in the case of sustaining fragile balance in Carbon produced and carbon absorbed and zero carbon by 2030-2050 (Circular-Carbon-Economy) for the intended investigation (Moustakas, 2015).

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3. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT
3.1 Sustainable Marketing & Clients Acquisition Context

Kotler (1994) proposed that the "study of consumer behavior involves understanding the processes of how clients make purchases, what they choose to buy when they choose to buy it, and why they make these choices". Arndt, Kasser, and Sheldon, (2004) defines consumer behavior refers to the examination of the various processes individuals or groups undergo when selecting, acquiring, using, or disposing of products, services, ideas, or experiences to meet their needs and desires. The Curve of COVID-19 from 2019 to 2022 remained a period of many changes; one of these was the online buying culture, which Induced and strengthened online- buying behavior and activity. The Clients' behavior model(s) may sound intricate, but in fact, they are not as the products with extra benefit(s), Price tag, and certain quality attracts a clientele of all ages; the label of green products adds yet another value for conscientious clients.

Buyer behavior refers to the process by which an individual buys products or services, which can be influenced by factors such as needs, education, personal beliefs, background, goals, and other variables. To comprehend buyer demeanor, businesses conduct client behavior study, which includes examining two together qualitative and all-inclusive factors of the target display (Ramya & Ali, 2016). Although this data can provide insight into a consumer's preferred brands, it may not reveal the exact reasons why they chose certain brands and consumption patterns. The alterations in clients' purchasing culture and future projections and competitions have implied that entrepreneurs and businesses must craft new practices to connect and serve clientele environments; friendly shopping behavior, and environments friendly practices to reduce the carbon footprint (Di Crosta et.al, 2021). Those who resist change will deteriorate and disappear swiftly. Before making significant purchases, customers typically undergo a series of five stages. These stages involve identifying a problem, searching for information, evaluating available options, making a purchasing decision, and displaying post-purchase behavior. Buyers may avoid or rear some of these stages (Kotler, 2012). The buying stages are of the marketers' interests and can be used to induce the customers to buy behavior towards environment friendly/green buying behavior. The digital territory of Green Marketing is transforming buying culture. This phenomenon is the most complex and powerful commercial corridor in the context of online buying and bargain hunting, which has created worldwide interest for Green-marketers and entrepreneurs. (Erjavec & Manfreda, 2022).

During 2020, retail e-commerce international public transactions were assessed to be $4.28 trillion and are projected to grow to $5.4 trillion in 2022-2023 (Coppola et.al., 2022). Markets tend to attract customers who make impulsive, unintentional, reflexive, and thoughtless decisions when it comes to consumption (Kimiagari & Malafe, 2021), and this practice is stated as 'online spontaneous buying' behavior complexity (Wu et al., 2020). For example, clients in the UK consume almost £1 billion per month on impulsive purchasing (Bashar & Saraswat. 2020). It is observed that 80% of youth in the US are estimated to indulge in spontaneous online consumption (Verhagen & van Dolen; 2011). Various other research disclosed that up to 40% of online international buying could be characterized as unwise choices (Bashar & Saraswat. 2020; Verhagen & van Dolen, 2011) through comparative and statistical scrutiny, it is established that ecological mechanism awareness, imaginative and ethical culture, and self-efficacy significantly exhibit a positive effect on green purchase plans, and self-efficacy recognized as the critical predictor of objective. Nevertheless, ecological appreciation, self-efficacy, awareness, and green consumption plan mutually impact green buying behavior; environmental obligations have a positive effect (Kesenheimer & Greitemeyer, 2021). Nevertheless, AND Ali et al. (2021); Van Loo et al.

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(2013), and Tian et al. (2021) theorized that eco-friendly awareness might not affect the consumption objective. Nevertheless, it may induce and alter Clients' cognitive state concerning purchasing eco-friendly/green products. Similarly, researchers witnessed that environmental alarms correlate with eco-friendly purchase conduct and environmental–social assistance (conducts) with eco-friendly/green purchasing performance.

The following assumptions were deduced:

Hypothesis 1A | Environmental concern positively stimulates the green consumption decision among educated Clients.

Hypothesis 1B | Environmental cognition positively promotes eco-friendly buying intention.

Hypothesis 1C | Environmental responsibility positively promotes eco-friendly practices intention.

3.2 Transforming Digitized Buying Behaviors

Online spending is a globally practiced public activity (Erjavec & Manfreda, 2022). During 2020, trade e-commerce transactions growth was estimated to be $4.28 trillion, which was anticipated to grow to $5.4 trillion in 2022 (Coppola, 2021). Clients often make spontaneous, unexpected, unreflective, and unplanned consumptions witnessing some cognitive benefit to satisfy their inner taste and advantage, it may not be green consumption and eco-friendly in totality (Habib & Qayyum, 2021; Kimiagari & Malafe, 2021) and this spontaneous consumption denoted to as 'spontaneous online shopping as well (Wu et al., 2020). To give an illustration, impulsive buying among UK customers amounts to £1 billion each month, while approximately 80% of teenagers in the US are believed to have made unplanned online purchases (Carter, 2018). Numerous studies disclosed that up to 40% of all online purchases internationally could be categorized as spontaneous; this is a significant investment, and marketers may capitalize on rash buying behavior, manufacturing superior quality with the incentive of additional added benefits of eco-friendly purchases (Chan et al., 2017; Verhagen & van Dolen, 2011).

Buyers always contemplate that they will be inclined to shop for such products if they can obtain several connected benefits from an eco-friendly/green product. Likewise, green foodstuffs have apparent remunerations, like being healthier and environmentally friendly (Chan et al., 2017). When customers recognize that society has developed green buying culture, they also follow the consumption of green products and further create an intention of collective behavior. Subjective models can be termed a descriptive model and injunctive culture, which bear a self-determining analytical role and stems from individual buying culture intentions (Chatzisarantis & Biddle, 1998). Owing to collective merging psychology, descriptive cultures often show identical behavior of groups (Hmielowski et al., 2019). In the field of healthcare, the significance of injunctive norms has been consistently confirmed (Kesenheimer & Greitemeyer, 2021; Wang X. et al., 2019).

The concepts of organic, eco-friendly processed food items, if practiced by family, society as a healthy diet and avoid unhealthy diets; this change would support eco-friendly practices (Folkvord, Roes & Bevelander, 2020). The theory of green development, green acquisition, is advantageous to the ecological environment, which clients broadly document. Still, this aspect profoundly impacts when practiced as groups and clusters of societies. The green clients will evaluate which behavior has more reward in the mechanism of collective consumption. The green consumption model inherits more ethical benefits when compared with non-green consumption. Ethics as an indistinguishable control will create entities that crave magnificence. Eco-friendly practices can venture group and societal eco-friendly practices and quality theoretical orientation, which can bridge the gap.

Accordingly, the following assumptions are made:

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Hypothesis 2A| Eco-friendly perceived benefit(s) inherit incremental positive influence on the eco-friendly purchasing decision among educated buyers.

Hypothesis 2B| Streamlined standards positively stimulate eco-friendly /green purchase intention.

Hypothesis 2C| Descriptive norms positively promote green purchase intention.

Hypothesis 2D| Injunctive norm positively promotes green purchase intention.

Believing that behavior will have a certain effect can motivate individuals to engage in that behavior and conduct related actions. This belief, known as strong perceived behavior, is a key factor in shaping behavior (Augustinus, & Agnes, 2020. If customers think that they have sufficient capability to purchase a specific thing or product and can visualize the buying process, their observable behavior towards it will be strong, and they will have a greater intention to buy environmentally friendly products (Wang et al., 2019). Nystrand and Olsen (2020), in their study identified two factors, self-efficacy, and self-control, through practical testing of the perceptual behavior mechanism. The six factors were found to be more dependable than a single factor. The study examined the impact of behavioral control on eco-friendly purchase intention using factors such as buying intention, quality, price, awareness, self-efficacy, and self-control. When individuals have sufficient self-efficacy and confidence, their motivation to complete a purchase is stronger, even if there is some risk involved (Vamvaka, et, al. 2020). Furner et al. (2018) it was found that having a strong belief in one's abilities could encourage individuals to make a purchase decision. Xu, Y, Khan, Jin, Altaf, Anwar & Sharif, I. (2022) also found that self-efficacy plays a role in promoting online consumption and purchase decisions.

The element of rational conduct is the unit of environmental awareness and self-control that triggers an individual buying process. Clients' concerns relate to quality, price, and self-efficacy for positively addressing environments and to scheme specific buying intentions and behavior (Vamvaka et al., 2020).

The procurement intention moderates when a buyer is not particular about products and enters the market with poor awareness, and his conduct and buying intention will also be reduced. Self-control and awareness remained important reasons for purchase behavior and could lead to the consumption process. Controllability also has an emotional power that affects individual behavior alterations (Vamvaka et al., 2020). When buyers have plenty of resources and self-control over their buying behavior, buyers have adequate knowledge and confidence about the market, and their intent to buy green products and the scheme will be more vital.

Accordingly, the following assumptions are made:

Hypothesis 3A | Self-efficacy positively promotes green purchase intention.

Hypothesis 3B | Controllability positively promotes green purchase intention.

Hypothesis 3C | Clients' concerns relate to quality, price, and self-efficacy for positively addressing environments and to scheme specific buying intentions and behavior.

The presence of environmentally friendly/green products does not center on green purchase activities. This is because the central to whether customers adopt certain conduct that is the subjective propensity and interest of the conduct subject, and behavior intention is the best predictive tool for buying behavioral decision-making (Barari et al., 2020). Nevertheless, few studies advocated that an affirmative (i.e., enjoyable, addictive, reasonable) online clients Purchasing involvement (GREEN OCPI) may upsurge clients' obsession with the bargain-hunting exercise (Anshu et al., 2022) and have an increasing impact on the clients' buying mobility in the context of online spontaneous purchasing activities (Barari et al., 2020). GREEN OCPI discourses on the growing psychological

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stimulus of client connections with a wide range of simulated sensitive touchpoints (Bleier et al., 2019), comprising both practical and psychosomatic magnitudes (Klaus, 2013). E-commerce channels mostly design clients-oriented touchpoints in the context of evolving a satisfying GREEN OCPI that is beneficial to fascinating and retentive and loyalty earner hamper, subsequently winning spontaneous growth (Bleier et al., 2019).

Therefore, it is vital to appreciate the connection between the GREEN OCPI and spontaneous ordering to mature an understanding of the client base and the e-commerce-inclusive industry (Kuppelwieser & Klaus, 2020). This customers principal indulgence is of particular significance to online buying understanding and administration; to measure the influence and to balance the stress of increasing demand accompanying the rationality and owned by engage it in an ethical fashion and style that cannot be exploitation not quite impulsive consumption as these are belonging to unacceptable services-side effects to a degree wasteful spending challenges and monetary aftermaths that grant permission come into being irresponsible payment (Bleier et al., 2019; Kuppelwieser & Klaus, 2020). It is also imperative to measure that extravagant spontaneous online spending increases ecological waste; spontaneous buying choices lead clients to acquire material kinds of stuff which may not be necessarily required yet may trigger primary results in unsustainable buying.

The following assumptions were made:

Hypothesis 4A | Online buying behavior is commercially viable at both ends and adds value by being ethical and environment-friendly among educated Clients.

Hypothesis 4B | Self-effectiveness has a substantial effect on green acquisition performance.

Hypothesis 4C | Self-awareness has a significant positive impact on eco-friendly procurements conduct.

4. GREEN CONSUMPTION & MARKETING COMPLEXITIES
4.1 Relationship between the Price difference, Green OCPI, and online buying

The accessibility component of the price tag and Green OCPI is accredited to the customer's choice of green/ eco-friendly purchasing efforts without geographical lag or time constraints. The clients or individuals do buy at their suitable time and geographical position(s) at their convenience, as the time stretch is more prominent for clients whose time is limited because of their obligation to various commitments (Faqih, 2016). Equally, customers who feel unfulfilled on account of familiarity accompanying websites accompanying too many graphical aspects can feel dejected about mathematical podiums (Pandey & Chawla, 2018). Hence, greater availability by digital firms will increase the expectation of purchasing at higher prices for green worth-additional products and duties (Chan et al., 2017).

The following hypotheses were developed:

Hypothesis 5A | Green purchase intention positively mediates the relationship between eco-friendly cognition and price difference of products.

Hypothesis 5B | Green purchase plan positively arbitrates the relationship between environmental obligation and eco-friendly purchase activities.

Hypothesis 5C | Descriptive norm meaningfully positively affects green purchase behavior intention.

Hypothesis 5D | Green purchase intention positively mediates the relationship between the Injunctive norm and eco-friendly culture.

The satisfaction part of the obligation and self-induced aspect of the green

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OCPI mentions the sentimental feature of the web design. The display of product inventory is designed so that the virtual interface provides instant inclination to the client when searching, matching, and ordering products from the digital platform (Pandey & Chawla, 2018). The online web pages are designed by firms keeping in view the client's psychological and transformed digitized buying patterns in a perspective of reliability, comfort, and pleasure during their online buying journey; this experience may persuade their feelings and craft longevity for transformed shopping behavior (Kranzbühler et al., 2018).

Additionally, shopping from digital platforms eliminates physical and emotional hassles like parking, windows, and shelves, visual scan for the price, and expiry date; the state-of-the-art web pages and firms still replicate the enjoyment and pleasure of store-like atmospheres (Kranzbühler et al., 2018). In addition, e-commerce channels incorporate chat rooms, search engines, and innovative technologies to enrich Clients' delight during shopping (Pandey & Chawla, 2018). Some clients may feel digital dominance and online entrapment and decline further shopping, but 89% of clients feel satisfied and obliged that they have reduced traffic congestion, cut-down fuel emissions, and mitigated carbon footprint while relishing virtual interfaces for a prolonged period, further clients' involvement in flow may inspire them for impulsive buying choices (Becker & Jaakkola, 2020).

The actuality of eco-friendly products does not straightway lead to buyers' green purchase activities. In certain norms, the conduct lies in personal responsiveness and inclination, and behavior objective is the best analytical tool for consumption behavioral decision-making (Li, & Leonidou, 2021). Buyers' eco-friendly acquisition conduct requires understanding an eco-friendly culture towards green produce and consumption of merchandise, and the personal preference and intent to buy green products are gradually stimulated. Nevertheless, the procurement intentions progressively streamline and mature green buying. Previous research has also amply revealed that intention has an undeviating constructive role in endorsing eco-friendly conduct in different fields (Wang et al., 2021).

The following hypothesis was deduced:
Hypothesis H6 | Perceived online eco-friendly buying awareness and practices add value and positively stimulates the eco-friendly purchase decision.

5. METHODOLOGY

An original web-based survey informed by evidence from past literature and validated scales and adopted the General Ecological Behavior GEB scale (Kaiser & Wilson,2004) was developed. A Facebook advertisement campaign was used to disseminate the link to an online Google Consumer Surveys between February-April 2023 (n = 482) (Used PLS-SEM Statistical Modeling) participants including from Canada, the UK, the USA, Pakistan, and Saudi Arabia, to determine general domestic buying/consumption patterns and preferences; narrowly related with the Clients buying behavior and growing concerns of "disruptive climate change". The "Participants Ecological Environment Behavior Survey Report" stated that more than 90% of respondents believe environment-friendly/green consumption is significant, but only 50% are willing to practice.

5.1 Participants

To distribute the survey questionnaire an online survey platform has been used to ensure random distribution and anonymity of the respondents. The questions within each variable were shuffled to prevent personal bias. Pre-research was conducted with sixty participants to refine the questionnaire, based on data analysis. The definitive version was then distributed to a large sample of Clients electronically, without any incentives offered to avoid bias. This was done to prevent participants from trying to guess what the researcher is looking for and answering accordingly (Hair et al., 2020). Data was gathered from

343

respondents using random sampling, and a total of 482 surveys were gathered.

Questionnaires were removed from the analysis that was not correct or contained invalid information. This was done because answers from the same IP address were repeating, incomplete responses. As per Hair et al. (2020), a common guideline is to have at least five observations for each variable being studied, although the most acceptable size for sample per variable is ten observations. Thus, a sample size of 482 is considered appropriate for conducting a robust analysis. Of these questionnaires, the adulthood of members was male accompanying a percentage of 51.7%, and 48.3% by women, accompanying an equal classification of genders. Around 60% of the accused were young population under the age of thirty-five. Young accused accompanying university levels presented concern for the atmosphere, being certain counselors of institution, and potential future clients (Wang et. al., 2019).

6. RESULTS AND DISCUSSION

The demographics for the participants have been gathered based on age, gender, qualification, income, and country. Most of the participants were male, between the age of 21 to 25 years had a bachelor's or under graduation. The majority of the respondents belong to Pakistan. Table 1 shows the complete details of the participants.

7. DEMOGRAPHIC ANALYSIS

The participants in this research study were divided according to their gender, age, income, qualification, and country. In this research paper, the total number of participants who responded to the survey questionnaire was 482 of which 332 were males and 150 were female. According to the age of the respondents, 35 participants belong to 15 to 20 years, 195 respondents were between 21 to 25 years, 58 were between 26 to 30 years, 44 participants belong to 31 to 35 years, and 119 participants were between 40 and above years.

Based on the qualification of the participants 249 were bachelor/ undergraduate, 24 were intermediate/ higher secondary school, 138 were masters/ postgraduate, 9 were matriculation/ secondary school, and 62 were Ph.D. or equivalent.

Based on the income of the respondent's majority had less than $2,000 income with a ratio of 264. And according to the participant's nationality (country), most of the respondents belong to Pakistan

Table 1 Demographics

Variables	Frequency	Percent
Gender		
Male	332	68.9
Female	150	31.1
Age		
15-20	35	7.26
21-25	192	39.83
26-30	58	12.03

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31-35	44	9.13
36-40	34	7.05
40 and above	119	24.69

Qualification

Bachelor / Undergraduate	249	51.7
Intermediate / Higher Secondary School	24	5.0
Master / Postgraduate	138	28.6
Matriculation / Secondary School	9	1.9
PhD or Equivalent	62	12.9
Income		

$ 2000 - 4000	83	17.2
$ 4100 - 6000	31	6.4
$ 6100 - 8000	28	5.8
$ 8100 - 10000	17	3.5
$ above 10000	59	12.2
Less than $ 2000	264	54.8

Country

Belarus	3	.6
Bulgaria	3	.6
Canada	18	3.7
India	6	1.2
Morocco	3	6
Oman	3	6
Pakistan	351	72.8
Saudi Arabia	30	6.2
United Kingdom	41	8.5
United States	15	3.1
Yemen	6	1.2

Reliability Testing. Reliability helps in measuring consistency within the research

data (Dash & Paul, 2021). And to measure the reliability in PLS-SEM composite reliability (CR) is used which provides better internal consistency measurement as compared to Cronbach alpha (Hair et al., 2020). According to (Djakasaputra et al., 2021) composite reliability is required to be greater than 0.7 for latent variables. Composite reliability for all the latent variables of this research observed to be greater than 0.7 (table can be provided upon request).

Convergent Validity. Convergent validity helps in measuring the extent to which the construct is correlated (Clark & Watson, 2019). The average variance extracted (AVE) helps in measuring convergent validity (Yusoff et al., 2020). The value of AVE needs to be 0.5 or greater and for convergent validity the factor loading value needs to be greater than 0.7 (Shrestha, 2021). In table 2 the AVE and factor loading values have been shown for the variables and their items, which have met the above-mentioned criteria.

Discriminant Validity. To differentiate between the constructs from each other discriminant validity is used (Rönkkö & Cho, 2022). It also helps in ensuring that the results gathered from the analyzed data do not contain any discrepancies and are certain (Rasoolimanesh, 2022). Discriminant validity can be measured through three criteria that are Fornell and Larcker criterion, Heterotrait-Monotrait Ratio, and cross-loading between items.

Fornell and Larcker's criterion defines that an item of one variable shows more variance towards the other items of another variable (Afthanorhan et al., 2021). However, Fornell and Larcker's measurement for discriminant validity is not an effective way (Matthes & Ball, 2019). It has been suggested by Hair et al. (2021) that the Heterotrait-Monotrait ratio (HTMT) is an effective way of ensuring discriminant validity. The value of HTMT requires to be less than 0.9 after running the test through Bootstrapping. Table 4 shows the result of HTMT which confirms the discriminant validity.

Moreover, reliability testing and convergent validity have been observed for the data gathered from participants. Composite reliability for the gathered data is more than 0.7, and convergent validity or Average variance extracted (AVE) is 0.5. both convergent validity and reliability testing have been shown in the appendix (can be provided upon request) (shown in table 2). Fornell and Larcker Criterion is (shown in table 3), discriminant validity is majorly measured by HTMT, for which variable values must be less than 0.9 (shown in table 4) and variables' factor cross-loading is (shown in table 5).

Table 2. Reliability Testing and Convergent Validity

Construct	Items	Loadings	P values	CR	AVE
EC	**EC 1**	0.600	0.000	0.851	0.593
	EC 2	0.847	0.000		
	EC 3	0.823	0.000		
	EC 4	0.785	0.000		
GAP	**GAP 1**	0.769	0.000	0.856	0.664
	GAP 2	0.833	0.000		
	GAP 4	0.840	0.000		
GFE	**GFE 2**	0.898	0.000	0.906	0.829
	GFE 3	0.923	0.000		

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GPB	GPB 3	0.878	0.000	0.919	0.792
	GPB 4	0.905	0.000		
	GPB 5	0.866	0.000		
GPD	GPD 1	0.764	0.000	0.855	0.663
	GPD 2	0.847	0.000		
	GPD 4	0.829	0.000		
GPQ	GPQ 1	0.744	0.000	0.894	0.629
	GPQ 2	0.783	0.000		
	GPQ 3	0.825	0.000		
	GPQ 4	0.835	0.000		
	GPQ 5	0.774	0.000		
GWP	GWP 1	0.777	0.000	0.863	0.613
	GWP 2	0.826	0.000		
	GWP 3	0.794	0.000		
	GWP 4	0.723	0.000		

Table 3 Fornell and Larcker Criterion

	EC	GAP	GFE	GPB	GPD	GPQ	GWP
EC	**0.770**						
GAP	0.458	0.815					
GFE	0.495	0.414	**0.910**				
GPB	0.570	0.540	0.438	**0.890**			
GPD	0.586	0.531	0.645	0.612	**0.814**		
GPQ	0.449	0.553	0.434	0.696	0.551	**0.793**	
GWP	0.579	0.691	0.509	0.698	0.703	0.641	**0.783**

Table 4 Heterotrait-Monotrait Ratio (HTMT) Matrix

	EC	GAP	GFE	GPB	GPD	GPQ	GWP
EC							
GAP	0.602						
GFE	0.601	0.538					

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GPB	0.687	0.670	0.527			
GPD	0.742	0.706	0.832	0.750		
GPQ	0.542	0.697	0.514	0.800	0.679	
GWP	0.739	0.898	0.646	0.837	0.912	0.779

Table 5: Factor loadings and communalities based on a principal components analysis with varimax rotation for General Ecological Behavior

|	*EC*	*GAP*	*GFE*	*GPB*	*GPD*	*GPQ*	*GWP*
EC 1	**0.600**	0.332	0.168	0.341	0.266	0.274	0.382
EC 2	**0.847**	0.432	0.418	0.540	0.557	0.364	0.545
EC 3	**0.823**	0.305	0.489	0.455	0.503	0.399	0.420
EC 4	**0.785**	0.350	0.375	0.386	0.407	0.336	0.426
GAP 1	0.364	**0.769**	0.270	0.453	0.403	0.497	0.490
GAP 2	0.327	**0.833**	0.337	0.462	0.402	0.484	0.629
GAP 4	0.419	**0.840**	0.395	0.412	0.485	0.385	0.571
GFE 2	0.426	0.446	**0.898**	0.378	0.546	0.362	0.466
GFE 3	0.472	0.317	**0.923**	0.417	0.623	0.425	0.462
GPB 3	0.586	0.452	0.417	**0.878**	0.507	0.542	0.616
GPB 4	0.472	0.463	0.378	**0.905**	0.515	0.587	0.569
GPB 5	0.470	0.518	0.378	**0.886**	0.600	0.713	0.669
GPD 1	0.482	0.568	0.449	0.535	**0.764**	0.542	0.633
GPD 2	0.477	0.390	0.514	0.412	**0.847**	0.327	0.522
GPD 4	0.470	0.337	0.605	0.536	**0.829**	0.464	0.555
GPQ 1	0.286	0.434	0.329	0.547	0.453	**0.744**	0.545
GPQ 2	0.247	0.368	0.207	0.558	0.359	**0.783**	0.460
GPQ 3	0.447	0.436	0.432	0.590	0.495	**0.825**	0.515
GPQ 4	0.404	0.538	0.424	0.616	0.431	**0.835**	0.569
GPQ 5	0.369	0.403	0.292	0.442	0.424	**0.774**	0.442
GWP 1	0.531	0.596	0.305	0.571	0.523	0.563	**0.777**
GWP 2	0.528	0.591	0.388	0.586	0.601	0.518	**0.826**
GWP 3	0.331	0.557	0.421	0.561	0.558	0.512	**0.794**
GWP 4	0.422	0.414	0.485	0.463	0.513	0.414	**0.732**

Hypothesis testing has been a significant part of result analysis as it helps accept or reject the research hypotheses. The hypotheses testing results explain that Eco-friendly

marketing and consumer buying context (EC) (β= 0.134, p= 0.011), GAP (β= 0.012, p=0.809), GFE (β= 0.331, p=0.000), GPB (β= 0.118, p=0.025), transforming digitalized buying behaviors (TDB) (β= 0.411, P=0.411), and GWP (β= 0.340, p= 0.000). According to the hypotheses testing, H1, H3, H4, and H6 have been observed to be significant; hence are accepted. And H2 and H5 were observed to be insignificant; hence rejected.

Table 5 Hypotheses Testing

Hypothesis	Estimates	Sample Mean (M)	Standard Deviation	T statistics	P Values	Status
EC -> GPD	0.134	0.138	0.053	2.542	0.011	**Significant**
GAP -> GPD	0.012	0.012	0.050	0.242	0.809	**Insignificant**
GFE -> GPD	0.331	0.329	0.037	8.846	0.000	**Significant**
GPB -> GPD	0.118	0.118	0.053	2.245	0.025	**Significant**
GPQ -> GPD	0.040	0.329	0.049	0.822	0.411	**Insignificant**
GWP -> GPD	0.340	0.012	0.062	5.501	0.000	**Significant**

Figure 1: Path Diagram of Structure Equation Model
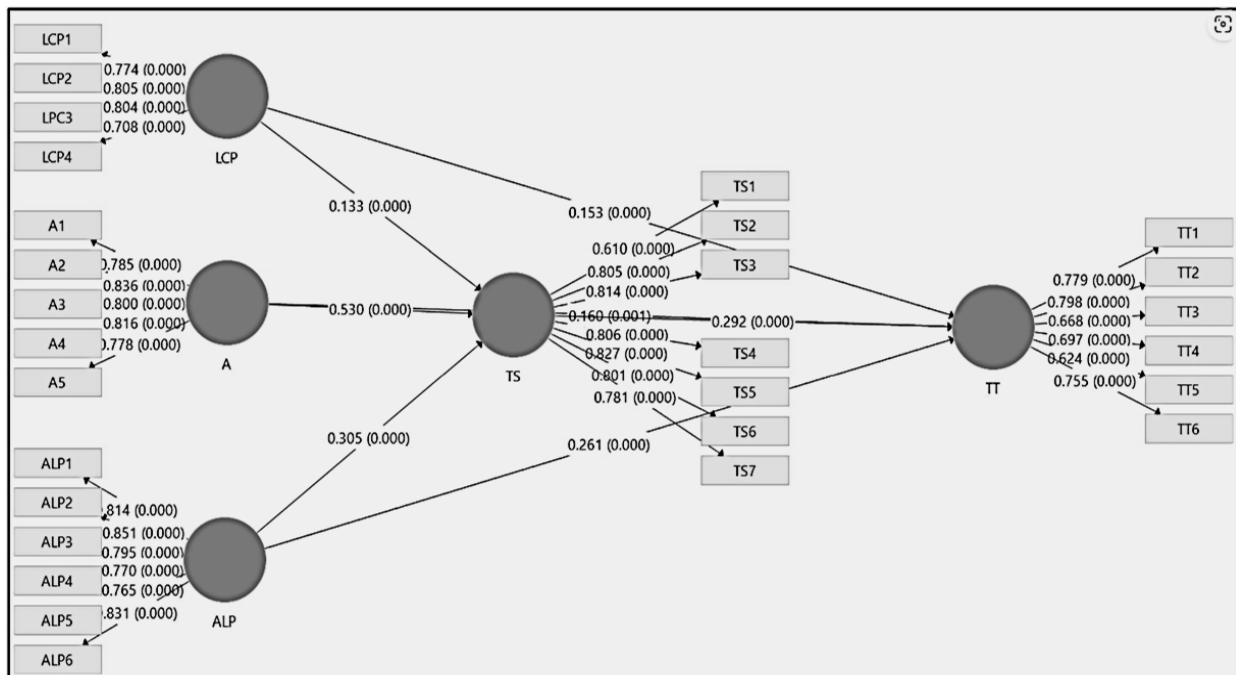
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The hypotheses testing results explain that Eco-friendly marketing and consumer buying context (EC) (β= 0.134, p= 0.011), GAP (β= 0.012, p=0.809), GFE (β= 0.331, p=0.000), GPB (β= 0.118, p=0.025), transforming digitalized buying behaviors (TDB) (β= 0.411, P=0.411), and GWP (β= 0.340, p= 0.000). According to the hypotheses testing, H1, H3, H4, and H6 have been observed to be significant; hence are accepted. And H2 and H5 were observed to be insignificant; hence rejected."

Some factors might be more important than the buying intentions, Awareness, cost, and quality of eco-friendly items. Among these are the following:

1. One primary reason consumers choose eco-friendly items is their desire to lessen their environmental impact. The product's effect on the environment, rather than its cost or quality, may be the deciding factor in such a situation.

2. Perceived Values: Some consumers may pay more for green items because they feel it is vital to back businesses that care about the environment.

3. Third, there are potential long-term benefits from purchasing eco-friendly goods, such as energy-efficient appliances, which may be more expensive initially but ultimately save consumers money on their monthly energy costs.

4. Limited selections: A person may believe they have to spend enormous amounts of money since there are not many green product options.

5. Five, spread the word about green products' environmental advantages, and people will buy them regardless of six. Cost or quality, it is worth noting that while some consumers place a higher value on green products' little influence on the environment than on the items' affordability or quality, others may place a higher value on these other elements.

8. RECOMMENDATIONS & CONCLUSION
8.1 Marketing and Cultures Covertly Co-Exist in harmony.

Marketing Surely, the fabulous (American Marketing Association AMA) 1940s–1960s, undisputed expert bystander on humankind weaknesses and likes utilization in a global perspective. Kotler, (2012) authoritatively remarked, marketing Ivy vane is treacherous and breeds on exaggerations and selling fantasy wrapped in beautiful market manners. Marketing is a set of traditional activities convincing the client public about products and services, satisfying consumer needs and wants (Kotler, 2013).

The arena of 21st century signifies Marketing components and Climate Change features face to face challenging each other and would advance and retreat and cross each other in the 21st century market environments till realization of the Net Zero carbon footprint by 2030-2050. This realization period would sketch marketing track to net zero carbon footprint by 2030-2050. where the old and new markets mix and mingle, from the village or rural weekly markets to ultramodern malls.

The consumers' possessive instincts, materialism and growth passions are the marketing exploitation arenas which ruthlessly created the curve of climate change, which was first identified during 1900. The future markets of clean energy would be the high playing grounds for the marketing, as it is projected that the clean energy appliances and products market size would grow to more than $2 trillion by 2030-2050. The world would be divided into industrial hub(s) political zones for capturing the clean energy markets using the umbrella of

sovereign market(s), of anybody who can pay can buy; the poor nations would suffer and endure the most of climate change. "Meeting [People] needs profitably" by 2030 – 2050 (Choudhary & Gokarn, 2013).

The diverse platform of Marketing is projecting the urgency of climate change awareness, Green Products requirement, Investments required for mitigating carbon footprint and manufacturing clean energy appliances and clean energy Grids in collaboration with UNO, UNEP, Paris Agreement and Saudi Arabian Vision 2030.

8.2 Conclusion

The study identified challenges and research agenda to redesign the consumption patterns, such as Clients' buying behavior, future of technology, clean energy, and climate change awareness yet delimited by various consumption patterns and require alignment with operative and psychosomatic dimensions by 2030—2050. The client's indulgence in fervent buying due to attitudinal loyalty and lack of eco-friendly buying patterns, and self-control, which also negatively impacts the environment; this gap needs further research. (Pandey & Chawla, 2018; Kuppelwieser & Klaus, 2020; Anshu et al., 2022).

It has been confirmed that the environment-friendly marketing approach and perception of the marketers, suppliers, and policymakers: review starts with an exploration of the margins of client's involvement works by discussing how both magnitudes of eco-friendly buying and the OCPI are vital to approving paradigm. The resulting research on services behavior and trend change is nurturing our indulgent and functioning of creative ways to stimulate active Clients purchasing obligation to climate change. The link between services performance and change is multifaceted, and most Clients are not skilled in forming that behavior modifications.

The cadre of Clients, Producers, Sellers, Marketers, suppliers and value Chain businesses, Industry, dealers, and Energy generating Firms and Eco-Friendly commercial policies may support and streamline set of environment-friendly practices in the business and manufacturing Industry, keeping pace with Paris Agreement, CCE, and Online-Clients-Purchasing- indulgence (OCPI).

Nevertheless, three prominent aspects describe and underpin the transition: energy efficiency, the growth of renewables, and electrification. The social media platform acts as a dynamic economic processor, composed of 4.54 billion users in the global economic hub of marketing and business hub; it is now renovating to reversible clean energy to reduce carbon footprints. The (COP-26) "carbon economy" classifies remove to the established principles of reduce, reuse, and recycle (the 3Rs)". Policymakers, business leaders, and Governments must project awareness and comprehensive market environments for Clients' future buying culture training.

The emergent marketing approach is central to shaping trends and bent the buying curve to eco-friendly practices by 2030-2050. The concrete focus of this research is to project as an instrument for an eco-friendly-marketing approach, marketing mix, marketing reach, and tools centered on the green culture, green products, and green purchase decisions. Besides, marketers' legislators can also reform the marketing and implement such as green branding, green publicity, and eco-labels built on the awareness of the Clients and the results of this study. The results of this study replicate and offer ideas for policymakers to structure comprehensive legal commands to stimulate green technology enterprises and informative programs, helping to change the thoughts and conduct of business leaders and Clienteles

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toward protecting the environments. The experts' perspectives offer an inclusive chronicle on vital facets of this imperative topic, as well views related issues plus artificial intelligence, driven social and digital marketing complexities, existing gaps, limitations in the contemporary research, bonding marketing complexities, climate change and especially clients transformed online consumption patterns; analyzed incorporating hypothesis derived from literature review, questionnaire items, and participants' vital feedback.

Technology giants like Facebook, Apple, and Google are aiming to create the "metaverse" incorporating emerging technologies for understanding the parameters of the ecosystem. This will lead to a significant transformation of our virtual worlds, or digital twins, in the coming decades, making them more interactive, multimedia, and embodied with the help of advanced computing devices and wearables. However, there are environmental challenges that need to be addressed before the metaverse becomes an integrated part of everyday life. Therefore, we urge a comprehensive approach to build the metaverse, as it is likely to become a massive entity alongside our physical reality, akin to a "Digital Planet Earth." This study aims to foster a more comprehensive discussion within the metaverse community by surveying the latest developments across various technologies and ecosystems unknown parameters, yet we know little about climate change.

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