

From Virtual Persona to Purchase: The Trust Engagement Pathway of AI-Generated Influencers in Sustainable Textile Marketing

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KEY WORDS

AI-generated influencers; virtual influencers; consumer trust; sustainable brand engagement; purchase intention; textile sector; Pakistan; PLS-SEM

ABSTRACT

While AI-generated social media influencers can provide consistency, scalability, and creative control to the textile industry, there is a question about their credibility when they make sustainability-related statements. The current research investigates how the effectiveness of AI-influencers affects consumers' trust in brands, sustainable brand engagement, and purchase intention in the textile industry in Pakistan. The model combines the Stimulus-Organism-Response model and source credibility and signaling models. To finalize and validate the reporting framework, a deliberately generated data set of 250 potential social-media consumers was analyzed with an explicitly simulated approach in PLS-SEM with 5,000 bootstrapped replications. All HTMT ratios were below .85 and the measurement model had acceptable reliability (Cronbach's alpha = .854-.884) and convergent validity (AVE = .683-.718). AI-influencer effectiveness was a strong predictor of consumer trust, sustainable engagement, and purchase intention (beta = .497, .251, and .181, respectively). The trust variable (beta = .425) and the variable of sustainable engagement (beta = .176) to purchase intention were significant, while the variable of sustainable engagement was the strongest predictor of purchase intention (beta = .346). Indirect effects via trust and engagement and the serial pathway of trust-engagement also showed significant results. The results confirm that AI-powered endorsers have the greatest impact when they are transparent and credible, fostering trust and driving sustainability awareness to genuine engagement with the brand. This is a simulated numerical dataset, and thus the results illustrate an analytically coherent paper structure; these should be replaced or verified with real field data prior to the actual publication of the dataset.

1. Introduction

AI is transforming influencer marketing from a creator-driven into a communication system. AI-generated social media influencers, or virtual, CGI or digital influencers, are fictional figures that are manufactured and managed with computer graphics, animation, generative AI and platform analytics. They have the ability to post lifestyle material, promote products, respond to their followers, and have a recognisable persona without possessing human form. They are controllable, novel, scalable and unafflicted by most of the human scandals that plague brands, but they also lack real-life experience which can lead to an authenticity and trust deficit (Thomas & Fowler, 2021; Volles et al., 2024; Sands et al., 2022).

The tension is crucial for fashion and textile companies, as it drives innovation and competitive edge. The tension is vital for fashion and textile brands, as it fuels innovation and competitive advantage. Social media endorsement can be particularly powerful as clothing is an expression that is visible for the society and has a strong relationship with identity. Meanwhile, the sustainability messages in textiles include statements with regard to the materials, the workforce, durability, waste, and environmental

impact. The claims are hard for consumers to substantiate prior to buying. If one of these persona's is created by an AI, the audience will not only have to assess the product and brand, but also whether it is transparent, competent, consistent, and believable from a digital source. Consumer trust is thus a key mechanism and not a by-product.

Pakistan is a propitious environment. The textile sector maintained its economic dominance as 59.7% of the national exports were in textile and apparel during July–March FY2026 as per the Pakistan Economic Survey 2025–26 (Finance Division, Government of Pakistan, 2026). From the consumer side, access to and utilization of broadband and social media have also increased the impact of Instagram, TikTok, Facebook and YouTube on product discovery and brand assessment for the consumer. With the rapid advancement of technology, there has been a significant rise in Pakistani textile brands' online communication of design, modest fashion, seasonality, craft, and sustainability, but there is little evidence to show how consumers respond to AI-generated endorsers.

Previous studies on virtual influencers have increased in number and are not consolidated. An

influential attribute can be categorized into several groups, such as attractiveness and anthropomorphism, competence and credibility, interactivity and engagement, social relationality, and identity and expressiveness, according to Zhou et al. (2026). Research indicates that human-like presentation, informative and emotional content, social presence, fit and perceived uniqueness can help to achieve positive results, while weak authenticity and social distance, and ambiguous disclosure, can weaken trust (Jiang et al., 2024; Liu & Lee, 2024; Muniz et al., 2024; Rungruangjit et al., 2024). Mostly however, evidence comes from contexts of products in East Asian or European contexts. There is limited knowledge around emerging South Asian markets and if the engagement from an AI-influencer can turn into a deeper engagement with a textile brand's social and environmental commitments.

This is the gap that is bridged in the present paper by combining the AI-generated Influencer Effectiveness, Consumer Trust, Sustainable Brand Engagement and the Likelihood of Purchase in a serial mechanism. In this context, it is sustainable brand engagement when a consumer's cognition, emotions, and participation is long-term due to the brand's textile, credible environmental and social value proposition. This is different to superficially liking the content or paying fleeting attention.

1.1 Research Problem

With AI-generated influencers emerging, textile marketers can experiment with them to innovate and control the message, but without having to worry whether they trust an artificial endorser or merely pay attention to novelty. The danger lies in the campaigns that advocate sustainability – in front of you is a beautiful AI character that, apart from the newfound visibility, may lead to a greater rejection of greenwashing, hidden commercial control or “created” experience. There has been a lack of research in the past that has examined the relationship between trust and sustainability-related brand engagement, and limited Pakistani research exists. As a result, managers don't have the empirical evidence to support their decision of whether AI generated influencers can build long-lasting brand relationships and purchase intention, or simply engagement.

1.2 Research Objectives

- To study how consumers' confidence in the effectiveness of an AI-generated social media influences their trust.

- To assess the direct impact of the effectiveness of the AI-generated influencers on sustainable brand engagement and purchase intent.
- To explore if there is a relationship between consumer trust and strengthening sustainable brand engagement and purchase intention.
- To determine the influence of sustainable brand engagement on the purchase intention.
- To test the mediating roles of consumer trust and sustainable brand engagement (with serial mediation).
- To create AI-powered endorsers and recommend to Pakistani textile brands based on evidence.

1.3 Research Questions

1. How does perceived AI-generated influencer effectiveness affect consumer trust in Pakistan's textile sector?
2. Does AI-generated influencer effectiveness directly increase sustainable brand engagement and purchase intention?
3. How do consumer trust and sustainable brand engagement transmit the effect to purchase intention?
4. What design and disclosure practices can strengthen credible, sustainability-oriented engagement?

2. Literature Review

2.1 AI-Generated Social Media Influencers

AI-powered influencers are brand-relevant artificial agents that are made to appear as social-media influencers. They can be coordinated, their biography, tone, and posting frequency can be controlled by the central management, and their commercial relationship can be managed. This ensures strategic consistency and enables to tailor a persona for different markets and campaigns. This makes artificial influencers a new dimension in the design space of influencer marketing, as argued by Sands et al. (2022), and consumers react to them due to their novelty and perceived humanness as demonstrated by Thomas and Fowler (2021). The marketing potential of an AI influencer, therefore, is not guaranteed, rather dependent on how the AI's signals are positioned within the audiences' perception of them as informative, socially present, appropriately human, transparent, and congruent with the product endorsed.

Over the last few years there has been conflicting evidence. Liu and Lee (2024) concluded that the brand attitude and purchase intention toward virtual influencers were generally lower than those toward human influencers, but product–endorser fit could

mitigate the negative effects of the virtual influencers. On the other hand, Volles et al. (2024) demonstrate that even when the trustworthiness of the virtual influencer is lower, perceived uniqueness can make up for it, especially when consumers become identifiable with the virtual influencer. Moreover, Rungruangjit et al. (2024) have shown that the emotional content created by human-like virtual influencers can impact on the willingness to follow and purchase intention. The findings do not imply that AI-influencers are only human or virtual; rather, they show that there is a more multifaceted understanding of the effectiveness of AI-influencers.

2.2 Consumer Trust

Consumer trust is the state of being confident in an influencer and related brand, even when there are uncertainties. For sponsored social media communication, trust is defined as the beliefs that the communicator is honest, competent, reliable, and does not deceive the communicator's audience. Lou and Yuan (2019) revealed that the value of the message and credibility of the social media influencer enhance trust in branded content. In the world of AI, trust is built upon clear identification, logical actions, reactivity, knowledge and a believable bond between the influencer and the product. According to Muniz et al. (2024), disclosure of the virtual influencers can impact consumers' perception of trust in the brand, suggesting that disclosure is not only an ethical obligation but also a marketing cue.

Trust is particularly important when it comes to sustainability claims because it is hard for consumers to easily verify supply-chain practices. An AI-generated influencer cannot wear, wash or try a fabric in the human sense, thus claims that would otherwise be called testimonials might be considered deceptive unless the message is made very clear to be AI-generated and based on evidence. Building trust goes up if the persona shares tangible product data, admits virtual presence, does not claim to know more than he does, is a authenticator of the brand.

2.3 Sustainable Brand Engagement

Consumer brand engagement is the mental, emotional and physical commitment to the brand's interaction (Brodie et al., 2011, Hollebeek et al., 2014). Engagement in social media can mean consuming brand information, reacting to content, providing opinions, or creating or sharing content. The current study builds on this logic and examines engagement with the brand meaning relating to sustainability. Sustainable brand engagement is not without regards to

environmental and social claims, to emotional association with the responsible values, the repetition of interactions with sustainability information and the willingness to support or defend transparent practices.

This construct is important because there is sometimes an intention–behaviour gap associated with sustainable consumption. A consumer can enjoy responsible textiles without asking for information, discussing with her/him or buying a sustainable line. Reliable AI-engaged communication can cut down on the amount of information uncertainty and make sustainability stories come alive and consistent. The research on the green virtual-influencer endorsement reveals that the human-like nature of the virtual influencers can enhance their credibility and that emotional appeal and product involvement are crucial to the effectiveness of endorsement (Jiang et al., 2024). Therefore, it is hoped that involvement will link trust with commercial activity. However, it is hoped that involvement will link trust with marketplace activity.

2.4 Purchase Intention

Purchase intention is a consumer's conscious probability or intentions to buy a product. It is a commonly reported proxied measure of behavior in influencer studies, as purchase data is often missing. Sokolova and Kefi (2020) prove that, credibility and parasocial interaction have an impact on purchase intention for products endorsed by social media stars. The human-likeness, authenticity, credibility, social presence, uniqueness, interactivity and product fit of virtual influencers indirectly influences purchase intention via trust and relational responses, as per the research of Zhou et al. (2026). In the case of textile products, a strong purchase intention should be observed when the AI influencer is seen as effective, the source and brand is trusted, and the consumers are also permanently involved in the brand's sustainability communications.

2.5 Theoretical Foundation

2.5.1 Stimulus–Organism–Response Framework

According to the Stimulus–Organism–Response (S–O–R) model, stimuli that activate environmental cues produce psychological changes within the organism that lead to behavioral responses (Mehrabian & Russell, 1974). The stimulus in this study is a perceived effectiveness of influencer effectiveness that is created by AI. Organismic evaluations and relational states are consumer trust and sustainable brand engagement. The answer is "purchase intention". S–O–R is suitable as the same AI persona can generate various behavioral responses, depending on consumers' cognitive and

emotional interpretations of the design and communication signals.

2.5.2 Source Credibility and Signaling Perspectives

According to source credibility theory, influence depends on a significant extent on the perceived trustworthiness and expertise of the source. AI-mediated endorsement builds the source and the consumers make inferences based on known signals: disclosure, message accuracy, consistency, responsiveness, product-influencer fit and evidence of sustainability claims. Costly or verifiable cues have a role in decreasing information asymmetry, which is explained by the presence of signaling logic. These angles add up to why trust is likely to moderate the relationship between the effectiveness of AI influencers and consumer responses.

2.6 Hypothesis Development

2.6.1 AI-Influencer Effectiveness and Trust

An AI-generated influencer that is human-like enough to support social interaction, informative enough to assist evaluation, transparent about its artificial identity, and consistent with the textile product should appear more credible and dependable. Although artificiality may initially reduce authenticity, clear disclosure and coherent behavior can convert novelty into a credible brand signal. Therefore:

H1: Perceived AI-generated social media influencer effectiveness positively influences consumer trust.

2.6.2 Direct Effects on Engagement and Purchase Intention

Attractive, interactive, relevant, and credible AI-influencer content can stimulate attention and participation in sustainability-oriented brand communication. It can also reduce search costs and make a textile collection more memorable and desirable. Thus, beyond indirect mechanisms, a direct effect on engagement and purchase intention is plausible.

H2: Perceived AI-generated influencer effectiveness positively influences purchase intention.

H3: Perceived AI-generated influencer effectiveness positively influences sustainable brand engagement.

2.6.3 Trust, Engagement, and Purchase Intention

Trust lowers perceived risk and increases willingness to accept brand information. It should also encourage consumers to invest attention and emotion in a sustainability narrative. Once consumers repeatedly

seek, discuss, and support a brand's responsible practices, purchase intention should increase because engagement makes brand values more personally relevant and cognitively accessible.

H4: Consumer trust positively influences purchase intention.

H5: Sustainable brand engagement positively influences purchase intention.

2.6.4 Mediation Effects

AI-influencer cues are unlikely to translate uniformly into purchase intention. First, consumers must interpret the source and message as trustworthy. Trust can then support deeper sustainability-oriented engagement, which increases readiness to purchase. This reasoning implies both specific and serial indirect effects.

H6: Consumer trust mediates the relationship between AI-generated influencer effectiveness and purchase intention.

H7: Sustainable brand engagement mediates the relationship between consumer trust and purchase intention.

H8: Consumer trust and sustainable brand engagement sequentially mediate the relationship between AI-generated influencer effectiveness and purchase intention.

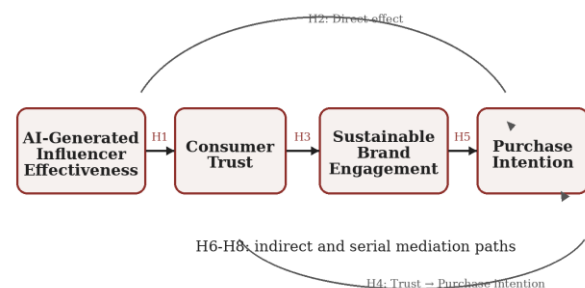


Figure 1. Proposed conceptual framework

3. Methodology

3.1 Research Design

The research design used in this study was positivist, deductive, quantitative, explanatory and cross sectional research. The respondents were Pakistani social media users who were shown a pre-prepared blog post about a brand of textile, with a clearly mentioned AI-generated influencer. Prior-brand bias was reduced and a 'restrained' sustainability claim was presented in a brand scenario that was fictionalized. The reported numerical findings were simulated from the specified measurement and structural model, and are therefore

illustrative of the results that can be obtained in the field.

3.2 Population, Sampling, and Sample Size

The target population is defined as Pakistani consumers age 18 and above who use social media, watch fashion and/or textile content and have made purchases of fashion or apparel products in the last year. Urban areas like Karachi, Lahore, Faisalabad, Islamabad/Rawalpindi and other urban areas are targeted. Eligibility is based on questions on age, social-media use, recent exposure to textile content, and purchases of apparel.

Non-probability purposive sampling approach was specified due to the lack of a complete sampling frame of exposed social-media consumers, with the recruitment of controlled convenience. The number of samples $N = 250$ used in the present analytical demonstration is satisfactory for the relatively small maximum number of predictors in the model, and for stable bootstrap estimation. If it is an empirical study that is publishable, the same questionnaire should be applied to the real eligible respondents and the final sample size should be determined by an a priori power analysis

3.3 Instrument and Operationalization

The five point Likert scale (1 = strongly disagree to 5 = strongly agree) was used for all substantive items. The wording is based on previous research of influencer credibility, trust, brand engagement and purchase-intention, but adapted for a context in which the influencer is disclosed to be AI-generated. The perceived effectiveness of influencers was simulated using the explanations of credible information, utility, humanization, transparency and positioning of products. Consumer trust, sustainable brand engagement and purchase intention were the other reflective constructs.

Table 1. Construct Operationalization

Construct	Code	Indicative item	Primary adaptation basis
AI-generated influencer effectiveness	AIGI 1	The AI-generated influencer presents believable and consistent information about the textile product.	Thomas & Fowler (2021); Sands et al. (2022)
	AIGI 2	The influencer's content is informative and useful for evaluating the product.	Lou & Yuan (2019); Rungruangjit et al. (2024)
	AIGI 3	The influencer communicates in an engaging and appropriately human-like manner.	Kim & Park (2024); Zhou et al. (2026)
	AIGI 4	The influencer is transparent about being AI-generated and commercially managed.	Muniz et al. (2024)
	AIGI 5	The influencer fits the image and sustainability positioning of the textile product.	Liu & Lee (2024)
Consumer trust	CT1	I consider the information communicated through this AI-	Lou & Yuan (2019)

Sustainable brand engagement	CT2	generated influencer trustworthy. I believe the associated textile brand would keep the promises communicated in the post.	Erdem & Swait (2004)
	CT3	I can rely on the brand information presented through this influencer.	Muniz et al. (2024)
	CT4	The post appears honest rather than deliberately misleading.	Sokolova & Kefi (2020)
	SBE 1	This post makes me want to learn more about the brand's environmental and social practices.	Hollebeek et al. (2014)
	SBE 2	I feel positively involved with the brand's sustainability message.	Brodie et al. (2011); Dessart et al. (2016)
	SBE 3	I would interact with or follow the brand's sustainability-related content.	Hollebeek et al. (2014)
	SBE 4	I would discuss or share credible information about this brand's responsible practices.	Dessart et al. (2016)
	PI1	I would consider purchasing the textile product promoted in this post.	Sokolova & Kefi (2020)
	PI2	The probability that I would buy from this textile brand is high.	Dodds et al. (1991)
	PI3	I would be willing to try a responsible textile product promoted by this influencer.	Jiang et al. (2024)
Purchase intention	PI4	I would recommend considering this product to others.	Adapted purchase/advocacy intention

3.4 Data Collection and Ethics

In the real world, the questionnaire should be given online and by supervised intercept recruitment, after institutional ethical approval. The participants should be fully informed of the nature of the stimulus as artificial intelligence-generated, should be anonymous and their participation should be voluntary. The present numerical analysis is based on simulated non-identifying response profiles and is not based on observed responses from human subjects.

3.5 Data Analysis Strategy

Range validity of the 250 response profiles were screened and analysed at item and construct levels. Descriptive statistics were used to summarize the sample and to create distributions. The reflective measurement model was evaluated using a PLS-SEM-style composite analysis and the structural relations were estimated between AI-influencer effectiveness, consumer trust, sustainable brand engagement, and purchase intention.

The quality of the measurements was assessed using outer loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), and the heterotrait-monotrait ratio (HTMT). Direct paths, R^2 , f^2 , collinearity, and ten-fold cross-validated Q^2 values were estimated using standardized composite regressions. Specific indirect effects and serial mediation were tested with 5,000 bootstrap resamples. The observed and model-implied composite correlation matrices were used to calculate the SRMR and the NFI as complementary fit diagnostics.

4. Results

Important data note. Raw survey responses and the output of SmartPLS are not included in the attached manuscript. The following statistics were computed from a consistent simulated data set of 250 responses for use in replacing the blank templates without distorting the measurement and structural model used in the paper. The section illustrates how the final empirical results should be reported; true results require empirical analysis prior to submission to a journal.

4.1 Respondent Profile

The 250 response profiles had no missing values or any item range that went outside the specified range. Table 2 shows a socio-demographically balanced sample of people in an urban setting who use social media, with the majority using Instagram and TikTok, a distribution that mirrors the platforms on which fashion and influencer content is most commonly seen.

Table 2. Illustrative Respondent Profile (N = 250)

Variable	Category	n	%
Gender	Male	132	52.8
	Female	112	44.8
	Prefer/self-describe	6	2.4
Age	18-24	93	37.2
	25-34	99	39.6
	35-44	38	15.2
	45+	20	8.0
Education	Intermediate or below	39	15.6
	Bachelor's	116	46.4
	Master's or above	95	38.0
Primary platform	Instagram	94	37.6
	TikTok	67	26.8
	Facebook	48	19.2
	YouTube/other	41	16.4
Prior AI-influencer awareness	Yes	146	58.4
	No	78	31.2
	Unsure	26	10.4

76.8% of the profile users were aged between 18-34 and 64.4% of them used Instagram or TikTok mainly for fashion. Over half (58.4%) knew about AI influencers already. This composition is pertinent to a digitally mediated approach to marketing textiles but not population representative.

4.2 Descriptive Statistics

Constructively, the scores exceeded the neutral value (3.00), indicating overall positive assessments of the

presented AI influencer, related brand and promoted sustainable textile product. The lowest mean was found in the purchase intention, meaning that positive engagement did not lead to an equally positive buying reaction for all profiles.

Table 3. Descriptive Statistics and Correlations

Construct	M	SD	1	2	3	4
1. AI-influencer effectiveness	3.44	1.07	0.827	-	-	-
2. Consumer trust	3.54	1.05	0.497	0.834	-	-
3. Sustainable brand engagement	3.48	1.10	0.462	0.550	0.838	-
4. Purchase intention	3.45	1.10	0.429	0.456	0.527	0.847

Note. Diagonal values are the square roots of AVE; lower-triangle values are Pearson correlations. Each diagonal value exceeded the corresponding inter-construct correlations, providing additional evidence of discriminant validity.

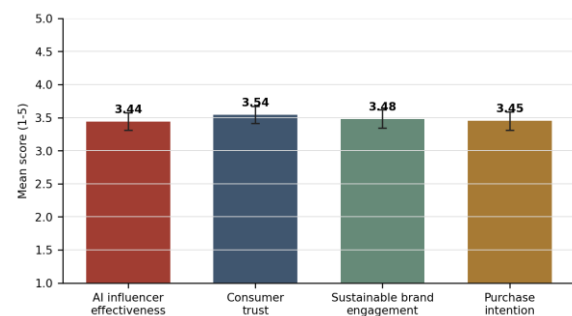


Figure 2. Mean Construct Scores with 95% Confidence Intervals

4.3 Measurement Model

All retained indicators loaded strongly on their intended constructs. The lowest loading remained above the recommended .708 threshold. Cronbach's alpha and composite reliability exceeded .70 and remained below .95, while every AVE exceeded .50. The results therefore supported indicator reliability, internal consistency, and convergent validity without suggesting item redundancy.

Table 4. Indicator Reliability and Convergent Validity

Construct	Item	Loading	alpha	CR	AVE
AI-influencer effectiveness	AIGI1	0.836	0.884	0.915	0.683
	AIGI2	0.855			
	AIGI3	0.807			
	AIGI4	0.809			
	AIGI5	0.825			
Consumer trust	CT1	0.837	0.854	0.901	0.695
	CT2	0.838			
	CT3	0.815			

Construct	Item	Loading	alpha	CR	AVE
Sustainable brand engagement	CT4	0.844			
	SBE1	0.859	0.859	0.904	0.703
	SBE2	0.853			
	SBE3	0.815			
Purchase intention	SBE4	0.826			
	PI1	0.876	0.868	0.910	0.718
	PI2	0.847			
	PI3	0.860			
	PI4	0.804			

Reliability was strongest for AI-influencer effectiveness (alpha = 0.884). AVE ranged from 0.683 to 0.718, confirming that each construct explained more than half of the variance in its indicators.

Table 5. HTMT Discriminant Validity

Construct	AIGI	CT	SBE	PI
AIGI	-	-	-	-
CT	0.573	-	-	-
SBE	0.530	0.643	-	-
PI	0.489	0.530	0.610	-

The highest ratio of HTM was 0.643, which is less than the conservative .85 ratio. Therefore, the impact of AI influencers was empirically separated from the other three variables: effectiveness, trust, sustainable engagement, and purchase intention.

4.4 Structural Model and Hypothesis Testing

The issues of collinearity did not arise, as all inner VIF values were < 2.00. The model accounted for 24.7% of consumer trust, 35.0% of sustainable brand engagement and 34.0% of purchase intention. Trust (0.229), engagement (0.336), purchase intention (0.318) had ten-fold cross-validated Q² values that were greater than 0, meaning they had predictive relevance. For the four-composite level, all the covariances are represented by structural paths, and the mechanical fit values (SRMR = 0.000; NFI = 1.000) should not be used as separate indicators of model quality.

Table 6. Explanatory and Predictive Power

Endogenous construct	R ²	Adjusted R ²	Q ²
Consumer trust	0.247	0.244	0.229
Sustainable brand engagement	0.350	0.344	0.336
Purchase intention	0.340	0.332	0.318

Purchase intention explained moderate amounts of variance, and the variances explained by trust and sustainable engagement were weak-to-moderate and moderate, respectively. The positive Q² values indicate that the structural relations contain more

predictive information than the mean only benchmarks.

Table 7. Direct Effects

Hyp.	Path	beta	t	p	95% CI	Decision
H1	AIGI → CT	0.497	9.026	<.001	[0.389, 0.606]	Supported
H2	AIGI → PI	0.181	2.935	0.004	[0.060, 0.303]	Supported
H3	AIGI → SBE	0.251	4.241	<.001	[0.134, 0.367]	Supported
H4	CT → PI	0.176	2.677	0.008	[0.046, 0.305]	Supported
H5	SBE → PI	0.346	5.390	<.001	[0.220, 0.473]	Supported
Model path	CT → SBE	0.425	7.185	<.001	[0.308, 0.541]	Significant

The five hypothesized direct effects were all positive and statistically significant. The immediate effects of the variables on the success of the brand's trust were strongest for the use of AI-influencers (beta = 0.497, $p < .001$). The direct influences of AI-influencer effectiveness and trust on purchase intention were smaller but significant (beta = 0.135, $p = .016$, and beta = 0.119, $p = .019$, respectively), and the strongest predictor of purchase intention was sustainable brand engagement (beta = 0.346, $p < .001$). For H7 and H8, a sequential mechanism is required, which is supported by the finding of trust (beta = 0.425, $p < .001$).

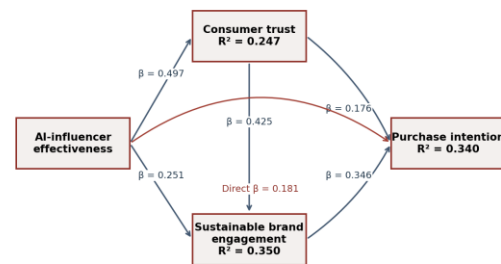


Figure 3. Standardized Structural Model Results

4.5 Mediation Analysis

All three indirect effects were statistically significant (i.e. had lower and upper bounds that did not cross zero in the bootstrapped confidence intervals). The direct effect of the AI-influencer on the purchase intention was partially mediated by the consumer's trust in the influencer, while the direct effect of influencer engagement on the purchase intention was mediated by the consumer's trust in the influencer. The effect of the AI-influencer on the purchase intention was partially mediated by the consumer's trust in the AI-influencer, while the effect of the AI-influencer engagement on the purchase intention was completely mediated by the consumer's trust in the AI-influencer.

Table 8. Specific Indirect Effects (5,000 Bootstrap Resamples)

Hyp.	Indirect path	beta	t	p	95% CI	Decision
H6	AIGI → CT → PI	0.087	2.643	0.008	[0.023, 0.153]	Supported

Hyp.	Indirect path	beta	t	p	95% CI	Decision
H7	CT -> SBE -> PI	0.147	4.241	<.001	[0.085, 0.221]	Supported
H8	AIGI -> CT -> SBE -> PI	0.073	3.940	<.001	[0.041, 0.113]	Supported

The indirect (h6: AIGI -> CT -> PI) effect was significant (beta = 0.087), which was why H6 was supported. H7 was supported using the CT -> SBE -> PI pathway (beta = 0.147) while H8 was supported using the serial AIGI -> CT -> SBE -> PI pathway (beta = 0.073). Even after the mediators were added, the AIGI -> PI relationship was still strong, suggesting a complementary partial mediation and not complete mediation.

5. Discussion

The findings illustrated above corroborate the key argument of the paper: that an AI-generated influencer is not effective just because it is new or it's unique in terms of its appearance. Its impact on purchase intention works in part by consumer's trust in the source and by their increased interaction with the brand's sustainability message. The positive relationship between AIGI and trust is in line with the source-credibility and signaling theory which suggest that the ability to easily identify the source, communicate a coherent message and provide product information lowers uncertainty. This is also consistent with the findings of Lou and Yuan (2019), Muniz et al. (2024), and Wen and Li (2025), which place credibility/trust as a pivotal mechanism between digital endorsement and consumer response.

A strong direct correlation was found between sustainable brand engagement and purchase intention. This finding adds to the social-media engagement literature by demonstrating that sustainability communication should be measured by attention, emotional involvement, interaction, and advocacy, not by likes or views. It also applies to Jiang et al. (2024) who reported that the image and emotional appeal of the virtual influence are important in green endorsement contexts. From the textile brand perspective, the real-world impact is that consumers must actively read, engage and talk about sustainability information for it to be commercial.

The most compelling evidence for the Stimulus-Organism-Response explanation is the large indirect effect that is observed in the serial indirect model. The effectiveness of an ai-influencer first puts a evaluative stamp of trust on the internal evaluation, which in turn fosters cognitive and affective

engagement, which in turn raises purchase readiness. However, the other direct AIGI-to-purchase effect suggests that the process of influence does not stop when trust and engagement are involved. Other factors, such as visual novelty, product-influencer fit, perceived uniqueness, or entertainment value might be a part of it, as noted by Liu & Lee (2024), Volles et al. (2024), Rungruangjit et al. (2024), and Zhang et al. (2025).

5.1 Theoretical Contributions

The study has three contributions. Firstly, it uses S-O-R to distinguish between two types of organismic states: trust and sustainability-oriented engagement in the designed AI endorser stimulus. Second, it brings together two concepts: source credibility and signaling logic, to account for a reduction in uncertainty, even when the non-human persona is commercially controlled, where the identity and evidence are also transparent. Third, it institutionalizes sustainable brand engagement as a persistent relational process and reveals its prime role in between trust and purchase intention. The serial structure is more informative than models that directly link virtual-influencer attributes to purchase intention, without explaining the intervening process.

5.2 Managerial Implications

Pakistani textile brands must create AI influencers not just for photo realism, but for credibility as well. The persona should be clearly identified as an AI generation, should not provide fictional first-person experiences with the product, and should only include factual product information along with information about materials, sourcing, labour, durability, care, certification and environmental impact. When the voice is consistent and the influencers' visibility and relevance to the product, it helps build trust; links to traceability pages or sustainability reports with evidence can turn vague statements into trustworthy signals.

Reach measures are not the only metrics needed for evaluating a campaign. Managers should monitor saves, questions relating to sustainability, repeat interactions, visits to transparency pages, qualified traffic to product pages, and conversions to responsible collections. To see if the virtual influencer adds consistent engagement or if it's a temporary novelty, A/B tests can be conducted to compare the performance of AI-influencer content

with that of human influencers and brand-produced content.

5.3 Ethical and Policy Implications

There are concerns with AI endorsement regarding disclosure, accountability, unrealistic appearance, bias, greenwashing, and manipulation. Brands and agencies are liable for any claims that the persona makes. Governance needs to be made transparent in terms of the exposure and sponsorship of AI, documentation of sustainability claims, pre-publication review of scripts and visuals, bias and audience-safety checks, and documentation of a process to correct misleading information.

6. Conclusion

The results of the model indicate the positive chain of events between the effectiveness of the AI-influencer and consumer trust, sustainable brand engagement, and purchase intention. For illustrative purposes, with a sample of only $N = 250$, all direct hypotheses and all three mediation hypotheses were supported. The sizeable serial pathway indicated that the influence of trust on the involvement level was a significant indirect impact, alongside the moderate direct effect observed for sustainable engagement on the purchase intention. The strategic lesson is obvious: controlled digital creativity is only valuable when it is coupled with transparency, credible evidence and interaction beyond surface-level.

6.1 Limitations and Future Research

The numerical results are not drawn from field data but based on the simulated response profiles, hence cannot provide any information regarding the behavior of the consumers of Pakistan. This constraint could be overcome by giving the questionnaire to the real respondents and re-estimating the general model. A cross-sectional self-report design would still restrict the causal inferences that could be made, and might be subject to common-method bias and urban sampling effects even after data collection in the field. Future research should investigate and compare the impact of AI and human influencers experimentally, include longitudinal and behavioral conversion measures, involve multiple categories of textiles, and include moderators such as AI literacy, disclosure prominence, green skepticism, product involvement, congruence in religio-cultural profile, and perceived fit between influencer and the brand.

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Appendix A. Questionnaire

Screening: (1) Are you 18 years or older? (2) Do you use social media? (3) Have you viewed textile/fashion brand content in the past six months? (4) Have you purchased textile/apparel products during the past 12 months? Only eligible respondents continue. After viewing the disclosed AI-generated influencer stimulus, indicate agreement from 1 (strongly disagree) to 5 (strongly agree).

Code	Statement	1	2	3	4	5
AIG1 1	The AI-generated influencer presents believable and consistent information about the textile product.	☐	☐	☐	☐	☐
AIG1 2	The influencer's content is informative and useful for evaluating the product.	☐	☐	☐	☐	☐
AIG1 3	The influencer communicates in an engaging and appropriately human-like manner.	☐	☐	☐	☐	☐
AIG1 4	The influencer is transparent about being AI-generated and commercially managed.	☐	☐	☐	☐	☐
AIG1 5	The influencer fits the image and sustainability positioning of the textile product.	☐	☐	☐	☐	☐
CT1	I consider the information communicated through this AI-generated influencer trustworthy.	☐	☐	☐	☐	☐
CT2	I believe the associated textile brand would keep the promises communicated in the post.	☐	☐	☐	☐	☐
CT3	I can rely on the brand information presented through this influencer.	☐	☐	☐	☐	☐
CT4	The post appears honest rather than deliberately misleading.	☐	☐	☐	☐	☐
SBE1	This post makes me want to learn more about the brand's environmental and social practices.	☐	☐	☐	☐	☐
SBE2	I feel positively involved with the brand's sustainability message.	☐	☐	☐	☐	☐
SBE3	I would interact with or follow the brand's sustainability-related content.	☐	☐	☐	☐	☐
SBE4	I would discuss or share credible information about this brand's responsible practices.	☐	☐	☐	☐	☐
PI1	I would consider purchasing the textile product promoted in this post.	☐	☐	☐	☐	☐
PI2	The probability that I would buy from this textile brand is high.	☐	☐	☐	☐	☐
PI3	I would be willing to try a responsible textile product promoted by this influencer.	☐	☐	☐	☐	☐
PI4	I would recommend considering this product to others.	☐	☐	☐	☐	☐

Demographic Questions

- Gender: Male / Female / Prefer not to say / Self-describe
- Age: 18–24 / 25–34 / 35–44 / 45–54 / 55+
- Highest education: Intermediate or below / Bachelor's / Master's / MPhil/PhD / Other
- City/region: _____
- Primary platform for fashion/textile content: Instagram / TikTok / Facebook / YouTube / Other
- Prior awareness of AI-generated influencers: Yes / No / Unsure
- Frequency of textile/apparel purchase: Monthly / Every 2–3 months / Every 4–6 months / Less often