

Extending Theory of Planned Behaviour (TPB): Cultural Inheritance and Craft Fragility in Pakistan's Upcycled Fashion Movement

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Abstract— Across Pakistan's creative capitals of Lahore, Karachi, and Islamabad, a quiet but profound shift is taking place as emerging designers repurpose discarded and reclaimed textiles into outfits with renewed worth and purpose a method known as upcycled apparel design. To explain what motivates this conduct, this research draws on Ajzen's Theory of Planned conduct, exploring how designers' attitudes, the social norms around them, and their sense of control over the practice come together to determine their purpose to upcycle. The study reveals a rich and frequently unexpected picture thru 30 in-depth interviews with designers and a thorough thematic analysis: designers' attitudes toward upcycling are deeply rooted in inherited craft traditions passed down thru generations, giving the practice a distinct moral and cultural weight, rather than in trendy sustainability language. At the same time, social perceptions remain divided while some families still identify reused materials with financial difficulty, a newer generation of design-school graduates is redefining sustainability as a badge of professional competence and artistic difference. Yet even with great desire and shifting perceptions, designers confront genuine challenges to putting their intentions into effect, particularly a fragmented supply chain for waste materials and a decreasing pool of craftspeople with the specialist skills needed to work with salvaged fabrics. Beyond the three primary motivations, the research reveals two additional forces affecting this environment the pull of cultural legacy and the fragility of the living craft infrastructure that upcycling depends on offering unique dimensions to extend how we interpret sustainable design behaviour. Together, these insights provide one of the first grounded, in-depth accounts of how Pakistani designers incorporate belief, tradition, and constraint into everyday practice, with important implications for how design education is taught, artisan communities are supported, and future textile-waste systems can be built.

I. INTRODUCTION

Global waste is expected to increase to 3.4 billion tons by 2050, more than double the projected population growth

over the same period, posing serious hazards to the environment, health, and prosperity (Kaza et al., 2018). A figure that has driven sustained academic and industry

interest in circular strategies such as upcycling the creative transformation of discarded or rejected materials into higher-value products (Sung et al., 2014). Pakistan, the world's fifth-largest textile exporter, sits close to the centre of this equation: its export garment sector generates substantial pre-consumer cutting waste, while its domestic apparel market increasingly mirrors the consumption patterns associated with fast fashion elsewhere (Khan & Faiz, 2025). Despite this exposure, empirical research on the psychological and cultural drivers of upcycling among Pakistani designers remains scarce, with most existing sustainable-fashion consumer research concentrated on Western, high-income markets (Gwilt & Rissanen, 2011).

This study addresses that gap by examining how emerging Pakistani fashion designers come to adopt or resist upcycling as a design practice. It applies (Ajzen, 1991a) Theory of Planned Behaviour (TPB), which explains behavioural intention as a function of attitude, subjective norms, and perceived behavioural control, as a single, focused analytical lens. Rather than testing the model deductively through survey measurement, this study uses TPB as an organising framework for a qualitative, interview-based investigation, allowing space for themes to emerge that extend beyond the model's original three constructs (Y. G. Kim et al., 2018).

The research is guided by the following research question: How do attitude, subjective norms, and perceived behavioural control shape Pakistani designers' engagement with upcycled apparel, and what additional cultural or structural factors, if any, shape this engagement beyond the boundaries of the TPB framework?

The remainder of the paper proceeds as follows: a review of the relevant literature on TPB, upcycling, and the Pakistani textile context; a description of the qualitative

methodology; a presentation of findings organized around the three TPB constructs plus two inductively derived themes; a discussion of theoretical and practical implications; and a concluding discussion of limitations and directions for future research (Zhou et al., 2025).

II. LITERATURE REVIEW

2.1 The Theory of Planned Behaviour in Sustainable Fashion Research

Ajzen (1991a) Theory of Planned Behaviour proposes that behavioural intention the most proximal predictor of actual behaviour is shaped by three factors: attitude (an individual's evaluative belief about a behaviour), subjective norms (perceived social pressure to perform or avoid the behaviour), and perceived behavioural control (the perceived ease or difficulty of performing the behaviour, reflecting both internal skill and external resource constraints) (Ajzen, 1991b). TPB has been widely applied in sustainable consumption research generally (H. Y. Kim & Chung, 2011) and in secondhand and upcycled fashion research specifically (Sethi & Jiu, 2025), where it has consistently demonstrated explanatory power for both purchase and production-side behaviours. However, cross-cultural applications of TPB caution that the content and relative weight of each construct can vary substantially across cultural contexts (Morren & Grinstein, 2021), and that intention does not always translate cleanly into behaviour (Hassan, Shiu, & Parry, 2016) a gap that we argue is under-theorised within the standard TPB architecture. These cautions motivate the qualitative, context-sensitive approach adopted in this study (Anwer & Hassan, 2025).

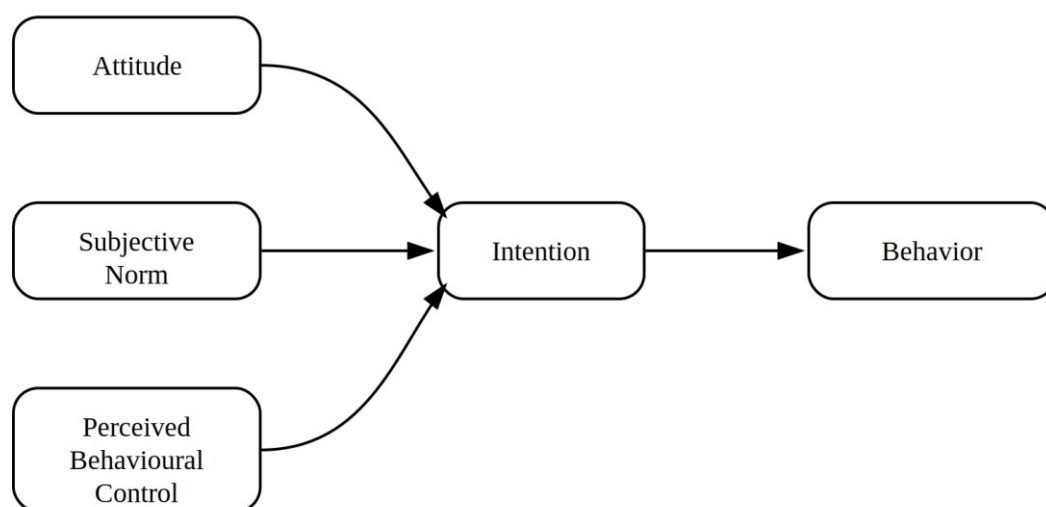


Fig.1. Base theoretical framework(Ajzen, 1991b).

2.2 Upcycling as a Distinct Design and Consumption Practice

Upcycling is conceptually distinct from conventional secondhand consumption. Where secondhand apparel is purchased and used in its original form, upcycling involves the deliberate creative transformation of discarded or rejected materials into a new, higher-value product (Sung et al., 2014). This distinction matters for designer-side research in particular, because upcycling requires not only a positive evaluation of reused materials but also the technical skill, material access, and creative confidence to transform them conditions that map closely onto the perceived behavioural control construct within TPB (Gwilt & Rissanen, 2012; Koch, 2019).

2.3 The Pakistani Textile and Craft Context

Pakistan's textile sector anchors a substantial share of national export earnings and employs millions of workers across the spinning, weaving, and garment-manufacturing value chain. Alongside this industrial base, Pakistan retains a living tradition of craft practices including block-printing, phulkari embroidery, and ralli quilting many of which historically involved the reuse of fabric offcuts and worn textiles well before the emergence of a formal sustainability discourse (Rauf & Kamal, 2023). This dual context, an industrial export economy layered over a pre-industrial craft heritage, distinguishes Pakistan from the Western contexts in which most existing upcycling research has been situated, and provides the empirical rationale for this study's single-country, in-depth qualitative focus (Fletcher, 2014; McDonough & Braungart, 2002).

2.4 Research Gap

While TPB has been applied productively to sustainable fashion consumption and to a lesser extent, to production-side design behaviour, the vast majority of this work remains quantitative in orientation, relying on survey instruments to measure the strength of attitudinal, normative, and control beliefs across large samples of consumers or designers. This methodological emphasis, while useful for establishing generalisable relationships between TPB constructs, offers limited insight into *how* such beliefs are formed, negotiated, or contested within specific cultural and material contexts particularly among practitioner populations whose engagement with sustainability is shaped as much by craft tradition, skill, and material access as by environmental attitude alone (Fletcher,

2013). Few studies have examined TPB qualitatively among design-practitioner populations in South Asia, where craft heritage, informal artisan economies, and distinct social attitudes toward reclaimed materials may complicate or extend the model's standard assumptions. Fewer still have engaged with upcycling specifically, as distinct from broader sustainable design practice, despite upcycling's unique dependence on fragmented waste-material supply chains and specialised textile-repurposing skills that are not captured by existing TPB applications in fashion. To the authors' knowledge, no study has examined TPB qualitatively among upcycled apparel designers in Pakistan specifically, leaving unanswered how designers in this context translate belief, social pressure, and practical constraint into upcycling practice. This study addresses that gap, offering a qualitative, contextually grounded account of TPB among an under-studied design population, and proposing candidate extensions to the model that reflect the particular cultural and infrastructural conditions shaping upcycling practice in Pakistan (Rasool et al., 2019).

III. METHODOLOGY

3.1 Research Design

This study adopts a qualitative, interpretivist research design, appropriate for exploring the subjective meanings designers attach to upcycling practice and for allowing themes to emerge inductively alongside the deductive TPB framework (Galletta, 2013; Schwartz-Shea & Yanow, 2013). Semi-structured interviews were selected as the primary data collection method to allow flexibility in probing individual designers' reasoning while maintaining comparability across the sample.

3.2 Study Context and Participants

Data were collected from 30 emerging fashion designers based in three major Pakistani design hubs: Lahore, Karachi, and Islamabad. Participants were purposively sampled to include individuals with direct, hands-on experience of upcycling practice, ranging from design students and recent graduates to independent designers operating small upcycled-apparel labels (Braun & Clarke, 2006a). This purposive strategy prioritised information-rich cases over demographic representativeness, consistent with standard qualitative sampling logic. Table 1 summarises the composition of the sample across the three design hubs.

Table 1. Participant overview by city (N = 30).

City	n	Participant Profile
Lahore	11	Design students, recent graduates, and independent designers with hands-on upcycling experience, several working with block-printing and phulkari techniques
Karachi	10	Independent designers and small-label founders, several with direct exposure to export-garment factory waste streams
Islamabad	9	Recent design-school graduates and early-career designers, several affiliated with university design programmes

3.3 Data Collection

Semi-structured interviews were conducted individually, guided by an interview protocol organised loosely around the three TPB constructs (attitude toward upcycling, perceived social expectations, and perceived barriers or enablers), while leaving space for participants to introduce topics not anticipated by the protocol. Interviews continued until thematic saturation was judged to have been reached within the sample. All participants are identified in this paper using anonymised codes (e.g., PK-04) alongside their city of practice, in line with the study's ethical protocol.

3.4 Data Analysis

Interview data were managed using NVivo 15 a widely used software package for qualitative data analysis (Zamawe, 2015), and analysed using Braun & Clarke (2006b) six-phase approach to thematic analysis: familiarisation with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final analytic narrative. Coding proceeded in two stages: an initial deductive pass organised material according to the three TPB constructs, followed by an inductive, open-coding pass designed to surface patterns not anticipated by the TPB framework. This second pass produced the two extension themes reported in Section 5.5 and 5.6.

3.5 Trustworthiness and Ethical Considerations

Trustworthiness was supported through investigator triangulation during theme development, an audit trail of coding decisions maintained in NVivo, and member-appropriate anonymisation of all participant identifiers. Informed consent was obtained from all participants prior to interview, and participation was voluntary and could be withdrawn at any stage without penalty.

IV. FINDINGS

Findings are organised around the three core TPB constructs attitude, subjective norms, and perceived behavioural control followed by two themes that emerged

inductively and extend beyond the model's original boundaries.

4.1 Attitude Toward Upcycling

Across the sample, designers expressed strongly positive, morally inflected attitudes toward upcycling. Rather than framing these attitudes primarily around contemporary environmental discourse, a majority of participants grounded their evaluative beliefs in inherited craft memory recollections of grandmothers, aunts, and other family members who routinely repurposed fabric offcuts long before “upcycling” existed as a design term (Sung, 2017).

"When my grandmother made a ralli quilt from old clothes, she was upcycling. We have been doing this for generations. Western designers just gave it a new name." PK-04, Lahore

"My grandmother never threw away fabric. Every piece became something else. I grew up thinking that was normal. Now I am in a design programme and I see that it is actually radical." PK-11, Karachi

A closely related dimension of attitude concerned designers' sense of moral accountability for the industry's environmental footprint. When asked about their awareness of the fashion industry's environmental impact, 29 of 30 participants responded affirmatively and unprompted, frequently citing specific local examples such as dye pollution in nearby waterways.

"I read about how our rivers are contaminated by fabric dye. I know this is happening in my country. I am a designer. I feel I have to be part of the solution." PK-09, Karachi

This pattern suggests that, for this sample, attitude toward upcycling is not a single evaluative judgement but a composite of inherited cultural meaning and a self-ascribed moral obligation tied to professional identity as a designer.

4.2 Subjective Norms: Familial Stigma and Emerging Peer Culture

Subjective norms in this sample were bifurcated along generational and social lines. The dominant, longer-standing norm was familial and communal, and frequently

negative: a substantial number of participants described a social stigma in which upcycled work is read by family members as evidence of financial hardship rather than deliberate creative or ethical choice.

"My family thinks upcycling means I cannot afford new fabric. There is a stigma. I have to explain constantly that it is a conscious choice, not a financial limitation." PK-17, Lahore

"When I tell relatives I make clothes from waste fabric, they assume it is because business is bad. I have stopped explaining to some of them. It is exhausting." PK-13, Karachi

Alongside this familial norm, a second, more recent, and more positive norm was described by younger participants, particularly recent design-school graduates in Islamabad and Lahore, for whom sustainability engagement functions as a marker of professional credibility among peers.

"Among people my age who studied design, if you are not thinking about sustainability, you seem out of touch. My batch-mates talk about it constantly. It has become part of how we judge good design." PK-19, Islamabad

These two norms coexist rather than replace one another, meaning individual designers often navigate simultaneous, contradictory social pressures depending on whether they are interacting with family or professional peer networks.

4.3 Perceived Behavioural Control: Structural Constraints Across Design Hubs

Perceived behavioural control emerged as the construct most strongly shaped by city-specific structural conditions. Table 2 summarises the pattern of constraints reported across the three design hubs in the sample.

Table 2. Structural constraints on perceived behavioural control, by city.

Lahore	Karachi	Islamabad
Primary barrier: unorganised material access from tailors and small workshops	Primary barrier: factory-scale cutting waste with no formal channel to designers	Primary barrier: limited artisan and workshop infrastructure
Deep craft continuity (block-printing, phulkari) supports skill access	Strong tailoring and pattern-cutting skill base	Thinner craft ecosystem; reliance on travel to source specific skills

"There is no organised system for collecting pre-consumer textile waste from factories. I collect offcuts myself from tailors nearby. It is time-consuming and unpredictable." PK-22, Islamabad

"In Karachi, the export factories produce enormous amounts of cutting waste every week. It just goes to landfill or gets burned. I have tried for two years to get a formal arrangement with even one factory. It is very difficult." PK-26, Karachi

Despite these constraints, perceived behavioural control did not straightforwardly predict lower intention. Several participants with low perceived control nonetheless reported high, persistent intention to continue upcycling, a pattern explored further in Section 4.5 and Section 4.6.

4.4 Behavioural Intention

Consistent with TPB's core logic, intention to continue and expand upcycling practice was high across the sample and appeared to draw jointly on positive attitude and, for the peer-influenced subgroup, favourable subjective norms. However, intention among designers facing severe structural constraints on perceived behavioural control could not be fully explained by the three TPB constructs alone a gap addressed by the two extension themes below.

4.5 Extension Theme: Cultural Inheritance as a Motivational Resource

The first theme extending beyond the core TPB constructs concerns the role of inherited craft memory as a distinct motivational resource, separate from, though related to, attitude. Participants repeatedly described upcycling not as a response to global sustainability discourse but as a continuation of practices already present in their family and cultural history.

"My mother still has phulkari pieces my great-grandmother made from scraps of old dupattas. Nobody called it sustainable fashion. It was just what you did with cloth." PK-06, Lahore

This theme suggests that, for this population, motivation to upcycle is sustained not solely by a general evaluative attitude but by an identity-linked sense of cultural continuity that neither the attitude nor subjective norm constructs, as conventionally operationalised in TPB, fully capture.

4.6 Extension Theme: The Fragility of Living Craft Infrastructure

The second extension theme concerns the erosion of specialised artisan skills required to work meaningfully

with reclaimed textiles. Several participants described difficulty locating ageing master craftspeople whose techniques — hand block-printing, specific embroidery stitches, natural dyeing are not being systematically passed to a younger generation drawn toward faster, higher-volume factory work.

"The block-printer I work with is almost seventy. His son does not want to continue the craft, it does not pay enough compared to factory work. When he stops, I do not know who I will work with." PK-28, Lahore

"For me, upcycling is not only about waste. It is about keeping these techniques alive by giving master craftspeople a reason to keep working, and a market for what they know." PK-24, Karachi

This theme is conceptually distinct from perceived behavioural control as ordinarily understood, because it concerns the depletion of a shared external resource over time rather than an individual designer's perceived capability or access at a single point in time.

Table 3 summarises all five findings themes, their status relative to the base TPB model, and an illustrative quote for each.

Table 3. Summary of findings themes relative to the base TPB model.

Theme	Status	Illustrative Quote
Attitude	Core TPB construct	"When my grandmother made a ralli quilt from old clothes, she was upcycling." PK-04
Subjective Norms	Core TPB construct	"My family thinks upcycling means I cannot afford new fabric. There is a stigma." PK-17
Perceived Behavioural Control	Core TPB construct	"There is no organised system for collecting pre-consumer textile waste from factories." PK-22
Cultural Inheritance	Inductive extension theme	"My mother still has phulkari pieces my great-grandmother made from scraps of old dupattas." PK-06
Craft Infrastructure Fragility	Inductive extension theme	"The block-printer I work with is almost seven, when he stops, I do not know who I will work with." PK-28

V. DISCUSSION

The findings of this study are broadly consistent with prior applications of TPB in sustainable fashion research (H. Y. Kim & Chung, 2011; Sethi & Jiu, 2025), while also illustrating the cross-cultural sensitivity of construct content that caution is often overlooked in standardised applications of the model. In this Pakistani sample, attitude and subjective norms in particular carry culturally specific content inherited craft memory and bifurcated familial-versus-peer norms, respectively that would not be visible in a purely quantitative, Western-normed instrument.

The study also speaks to the intention-behaviour gap identified by (Hassan, Shiu, & Shaw, 2016): despite high reported intention across the sample, several participants described concrete, ongoing barriers material access, artisan

availability that plausibly constrain the translation of intention into sustained practice. This is consistent with the view that perceived behavioural control, when structural rather than purely psychological, may act as a harder ceiling on behaviour than TPB's standard formulation implies (Feng et al., 2023).

Perhaps the most distinctive contribution of this study is empirical rather than purely theoretical: the identification of craft-skill erosion as a form of perceived-control constraint specific to craft-intensive, developing-economy design contexts, and largely absent from the existing upcycling literature, which has been developed primarily around Western, industrially mature design economies (Fletcher, 2014; Gwilt & Rissanen, 2011; McDonough & Braungart, 2002).

VI. THEORETICAL AND PRACTICAL IMPLICATIONS

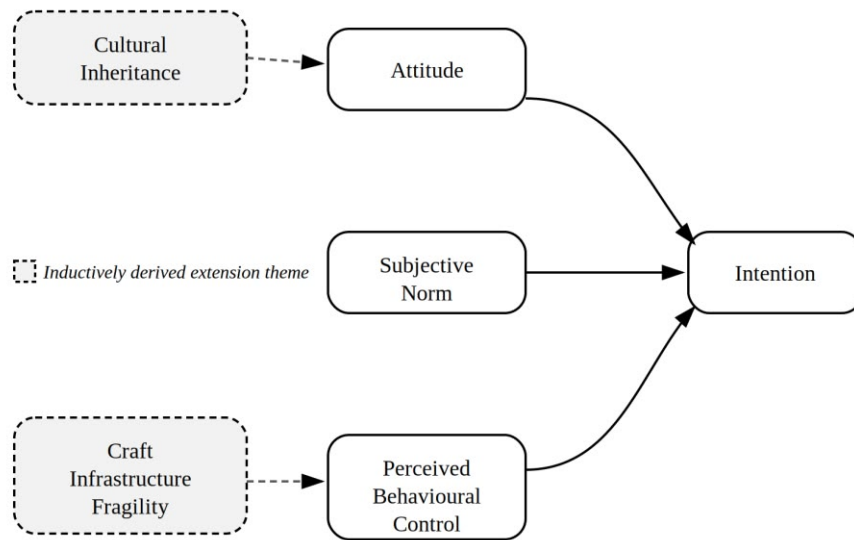


Fig.2. Extended conceptual model incorporating inductively derived themes.

6.1 Theoretical Implications

This study offers a focused, single-theory qualitative application of TPB to a design-practitioner population in Pakistan, a context in which the model has been under-applied. The findings largely affirm the explanatory value of the three core constructs while also indicating two boundary conditions. First, attitude in this context is not adequately captured by a single generalised evaluative judgement; it is layered with inherited cultural meaning that appears to strengthen and stabilise attitude in ways a standard measure may not detect. Second, perceived behavioural control, as conventionally defined around an individual's perceived capability and resource access, does not fully capture externally shared, slowly depleting resources such as a regional artisan skill base. The study proposes that future applications of TPB in craft-intensive design contexts consider incorporating a resource-continuity dimension within, or adjacent to, perceived behavioural control, to better capture constraints of this kind.

6.2 Practical Implications

For design educators in Pakistan, the findings support teaching upcycling as a continuation of indigenous craft knowledge rather than as an imported concept, given the strength and stability this framing appears to lend designers' attitudes. For artisan-support organisations and craft councils, the erosion of specialist skills documented in Section 4.6 represents an urgent and currently under-addressed constraint on the long-term viability of upcycled design in Pakistan; apprenticeship subsidies and structured connections between master craftspeople and design-school

graduates could meaningfully extend the working life of at-risk skills. For policymakers focused on textile-sector waste, the finding that awareness is not the binding constraint designers already recognise the environmental stakes suggests that formal, organised channels connecting pre-consumer factory waste to designers would likely be more impactful than further public-awareness campaigns. For industry stakeholders, the persistence of familial stigma documented in Section 4.2 suggests that brand communication reframing upcycled work as heritage-continuous, rather than necessity-driven, may shift consumer and community perception more effectively than sustainability messaging adapted from international campaigns.

VII. LIMITATIONS, FUTURE RESEARCH AND CONCLUSION

This study is limited to designers in three urban centres Lahore, Karachi, and Islamabad and its findings should not be generalised to rural artisans or to the broader Pakistani population. As a qualitative, interview-based study relying on self-report, it captures designers' accounts of their attitudes and intentions rather than observed behaviour over time; future research combining interviews with studio-based observation or supply-chain tracing would strengthen the empirical foundation. Finally, as a single-time point study, it cannot speak to whether the craft-erosion pattern identified in Section 4.6 is accelerating, stabilising, or reversing; a longitudinal design following the same cohort over several years would be well suited to this question, as would a follow-up quantitative study operationalising the

two extension themes identified here for testing within an expanded TPB model.

This study applied the Theory of Planned Behaviour, as a single, focused theoretical lens, to examine how attitude, subjective norms, and perceived behavioural control shape emerging Pakistani designers' engagement with upcycled apparel. Across 30 interviews spanning three major design hubs, the three TPB constructs demonstrated strong explanatory value, while two inductively derived themes cultural inheritance and the fragility of living craft infrastructure pointed to boundary conditions of the model in this specific cultural and economic context. The study contributes an empirically grounded application of TPB to an under-studied design population, and offers concrete implications for design education, artisan-support policy, and industry practice in Pakistan.

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Data Availability Statement: The information presented in this study is available in the manuscript. Additional data is available upon request from the author concerned.

Conflicts of Interest: The authors declare no conflict of interest.

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