



Sustainability-driven fashion: Unpacking generation Z's second-hand clothing purchase intentions

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ABSTRACT

This investigation probes Generation Z's proclivity towards acquiring sustainable merchandise, incorporating the Normative Activation Model (NAM) and the Model of Goal-Directed Behaviour (MGB) with a specific lens on circular goods. A purposive sampling method was employed to ensure that the selected participants possessed the specific characteristics required for this study. The total sample consisted of 711 surveys, of which only 457 fully completed responses were considered for analysis. The analysis utilized in this investigation is conducted through the partial least squares structural equation modelling (PLS-SEM) approach. The findings indicate that individuals' norms and aspirations substantially sway their procurement decisions, highlighting the importance of ecological consciousness and moral adjudication in sustainable consumption. The outcomes imply that the predilections of Generation Z are driven by altruistic intentions and the intrinsic valuation of sustainability, suggesting that corporations should conform to their sustainability ethos and anticipations, particularly within the sphere of circular commodities.

1. Introduction

1.1. Circular economy and environmental challenges in the fashion industry

The circular economy represents a transformative approach to aligning economic growth with environmental sustainability. Unlike the conventional linear model characterized by the "take-make-dispose" cycle, the circular economy focuses on minimizing waste and pollution, keeping products and materials in circulation, and supporting the regeneration of natural ecosystems. The textile and apparel industry, which is notorious for its significant environmental impact due to the extensive energy and water required for production, exemplifies the challenges of adopting sustainable economic practices (Jia et al., 2020). Specifically, 92 million tonnes of textile waste are estimated to be produced globally each year, a figure projected to rise to 134 million tonnes by 2030 in the absence of significant interventions. Additionally, according to recent estimates, the fashion sector contributes around 10 % of the world's GHG emissions, highlighting the urgent need to adopt more sustainable practices in textile management (BusinessWaste.co.uk). Furthermore, this sector is characterized by short product life

cycles, a wide variety of items, uncertain and fluctuating demand, and extended, inflexible supply chains (Sen, 2008). Moreover, the European Recycling Platform (ERP) launched the ERP Italia Textile Consortium to increase textile waste recycling and achieve a 50 % recovery rate by 2035. Given the significant increase in textile waste, the ERP underscores the urgency of implementing concrete measures. In particular, projections indicate that Italy could experience a 63 % increase in textile waste by 2030. The establishment of the consortium, therefore, represents a strategic and targeted response to address this environmental challenge (Textile Insights, 2024; January 22).

1.2. Secondhand fashion as a circular solution

Clothing is often underutilized, as individuals frequently own more than they need, leading to limited use before disposal and subsequent value loss (Zhou et al., 2021). A sustainable approach to this sector, which is based on the principles of the circular economy, is therefore essential (Brydges, 2021). Circular fashion emerges as a paradigm advocating for the reuse and recycling of clothing. Educating consumers on the potential for reuse and recycling is critical to reducing unsustainable habits (Chaturvedi et al., 2020; Shrivastava et al., 2021).

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Reused garments, often categorized as "secondhand clothing", stand out because they require no new production and are already integrated into the circular economy system (Kasavan et al., 2021). While recycled fashion is often subject to stereotypes, its adoption significantly reduces the ecological and social consequences of the fashion industry (Peña-Vinces et al., 2020). Additionally, purchasing secondhand clothing offers consumers tangible benefits, including lower costs (Borg et al., 2020). The second-hand economy has become a well-established trend in Italian consumer habits, as highlighted by the Secondhand Economy Observatory conducted by BVA Doxa. The data indicate continuous growth in both adoption and economic impact. In 2014, second-hand purchases were often associated with prejudice and were perceived as necessity-driven choices. By 2023, however, this practice had become common among 61 % of consumers, generating a record turnover of €26 billion, equivalent to 1.3 % of the national GDP, with a 44 % increase compared with that in 2014. Furthermore, the number of Italians participating in secondhand transactions rose from 19 million in 2014 to 26 million in 2023, with 76 % of buyers and 71 % of sellers conducting transactions at least twice a year. Italy, therefore, represents an ideal reference point for our study because of the widespread adoption and significant economic impact of the second-hand economy, making a compelling case to analyse the factors driving sustainable and circular consumption. Secondhand shopping is particularly popular among Generation Z (88 %), a demographic highly sensitive to ecological impacts, making its involvement crucial for ensuring sustainability and long-term benefits for future generations (Gazzola et al., 2020).

1.3. Aims and research focus

Generation Z embraces sustainable and circular approaches to production and consumption (D'Adamo and Lupi, 2021), standing out for its analytical and detail-oriented approach to clothing selection, with a strong preference for sustainable fashion (Pencarelli et al., 2020). Their brand loyalty is shaped by a brand's history of social responsibility and environmental sustainability, driving them to demand greater transparency from retailers (Gazzola et al., 2020). Environmental concerns, a commitment to a sustainable future, and the perception of green product quality are key drivers of Generation Z's consumption of green products, positively influencing their willingness to pay a premium for such items (Gomes et al., 2023). Despite its significance, additional studies are required to address the precise environmental concerns of this demographic (Hill and Lee, 2012; Biswas and Roy, 2016; Wei et al., 2018; Dabija et al., 2020). Examining the purchase intentions of younger consumers, particularly Generation Z consumers, towards eco-friendly products is essential for understanding their perspectives and preferences regarding the environmental attributes of sustainable products. Compared with previous generations, Generation Z is more likely to purchase secondhand clothing (Masserini et al., 2024). Furthermore, recent studies highlight an increasing awareness among this generation of the importance of sustainable consumption, coupled with a deep concern for the state of the environment and the progressive depletion of natural resources (Garbowska, 2024). Investigating the purchasing intentions of younger consumers, particularly Generation Z consumers, towards eco-friendly products is essential for understanding their perspectives and inclinations regarding the environmental attributes of integrated products. This study examines the determinants of demand for secondhand clothing among Generation Z merchants to identify the drivers behind their intention to purchase preowned garments. To explore these aspects, we introduce a unified framework that combines the norm activation model (NAM) (Schwartz, 1977), the model of goal-directed behaviour (MGB) (Perugini and Bagozzi, 2001), and price value. Adopting a multidimensional approach enables a more comprehensive analysis of the factors influencing Generation Z's decision to purchase secondhand clothing. This method allowed us to map the intricate landscape of consumer behaviour more precisely, identifying the key factors guiding Generation Z's choices in this context. From a

theoretical perspective, our research makes significant contributions to understanding Generation Z and sustainable fashion, providing clearer insights into the drivers of secondhand item purchases and consumer attitudes towards sustainable fashion. Practically, this research highlights the critical factors for encouraging Generation Z to adopt secondhand clothing, offering actionable insights for promoting sustainable consumption within this demographic.

2. Literature review

2.1. Sustainable consumption and secondhand fashion trends

The concept of sustainable consumption encompasses the intentional decisions made by individuals to choose environmentally friendly products (Bhardwaj et al., 2023). Research has shown that diverse factors influence the intention to buy more sustainable products; these factors include motivations related to environmental conservation; specific skills such as ecological awareness; cultural elements such as the level of individualism or social cohesion; and sociodemographic factors such as age, educational attainment, and financial resources (Kang et al., 2012; Wei et al., 2018; Han et al., 2022; Sharma et al., 2022). Among the growing concerns over the ecological damage caused by the apparel sector (Jung and Jin, 2016), secondhand fashion has emerged as a notable trend. This concept revolves around consumers' desire to purchase garments and accessories previously owned by others (Machado et al., 2019). These products, which embody both the role of buyer and seller in their lifecycle, have been the subject of research aimed at understanding the context in which they thrive and the motivations driving consumers towards second-hand fashion (Cervellon et al., 2012; Ferraro et al., 2016; Machado et al., 2019). Potential buyers of secondhand clothing primarily value environmental sustainability, garment quality, and the uniqueness of the items, considering these as key advantages. These attributes offset the perceived limitations of a narrower selection and the fact that the clothing is preowned. (Jaroslav Mazanec and Veronika Harantová, 2024).

2.2. Consumer motivations for engaging in secondhand fashion

Previous research identifies three main categories of consumer motivations for purchasing secondhand items: economic, critical, and hedonic/recreational factors. The economic factor, explored since the earliest studies on secondhand fashion (Williams and Paddock, 2003), relates primarily to cost sensitivity and the thrill of bargain hunting. Consumers are drawn to secondhand clothing to alleviate financial pressures, allowing them to meet basic and nonessential needs (Cervellon et al., 2012; Ferraro et al., 2016; Machado et al., 2019). Critical motivations encompass a desire to diverge from mainstream markets to satisfy ethical and sustainability concerns (Guiot and Roux, 2010). For some, it represents a form of anti-corporate expression (Chatzidakis et al., 2021). Additionally, purchasing from nonprofit thrift stores supports sustainable development, benefits charitable causes, and reduces environmental waste, creating a multifaceted win-win situation (Seo and Kim, 2019). Environmental concerns, such as recycling and waste reduction, also play critical roles (Cervellon et al., 2012; Ki et al., 2020). By opting for secondhand apparel, consumers can significantly lessen the environmental impact by reducing textile waste and dye use and promoting closed-loop consumption (Arribas-Ibar et al., 2022; D'Adamo et al., 2022). Hedonic and recreational motivations are linked to the joy of discovering valuable or collectable items not found in regular markets, the sense of community with other consumers or local thrift stores, nostalgia for past fashion trends, and the pursuit of unique, original styles (Guiot and Roux, 2010; Cervellon et al., 2012; Ferraro et al., 2016; Machado et al., 2019; Kim and Hwang, 2020). These motivations often lead consumers to pay more for the uniqueness and authenticity of recycled products, extending the lifecycle of contemporary garments and fostering individuality in fashion (Orminski et al.,

2021). Ferraro et al. (2016) introduce a fourth dimension—fashion—emphasizing the consumer's quest for authenticity, originality, and personal style, which is distinct from mainstream trends. This dimension highlights the growing acceptance of secondhand clothing in the fashion industry, mainly vintage clothing, which capitalizes on the authenticity and uniqueness of items (Guiot and Roux, 2010).

3. Theoretical framework

3.1. Model of goal-directed behaviour

The Theory of Reasoned Action (TRA), developed by Fischbein (1993), posits that voluntary behaviour is determined by behavioural intention, defined as a person's conscious motivation to participate in a specific conduct. Intentions are shaped by two main elements: attitudes, which represent positive or negative assessments of an action and subjective norms, which refer to the perceived social pressure to perform or refrain from a specific action. Specifically, subjective norms, in this context, indicate the socially perceived approval that Generation Z individuals expect to receive from their peers. The likelihood of purchasing second-hand products increases when individuals believe that their friends expect them to engage in such behaviour or view it favourably. The TRA applies exclusively to voluntary behaviours and does not account for those requiring resources or skills that are not readily available. The theory of planned behaviour (TPB), proposed by Ajzen (2011, 1991), extends the TRA by incorporating perceived behavioural control (PBC), which describes how a person perceives the ease or difficulty of carrying out a certain action, considering past experiences and potential obstacles. Ajzen (2011) emphasize that PBC over one's actions is crucial in explaining why intentions do not always translate into actions, particularly in complex contexts such as health-related behaviours (e.g., maintaining a healthy diet). Although perceived behavioural control may not always accurately reflect actual control, it significantly enhances the predictive capacity of the model. The Model of Goal-Directed Behaviour (MGB), developed by Perugini and Bagozzi (2001), represents an advancement of the TPB aimed at addressing some of its limitations by incorporating additional components to offer a deeper and more complete insight into individual decision-making. TPB identifies three main factors influencing motivation to act: attitudes, subjective norms, and PBC (Ajzen, 1991). However, the TPB has been criticized for insufficiently addressing the motivational and emotional dimensions of human behaviour. The MGB addresses this gap by introducing the concept of desire, which acts as a mediator between attitudes, subjective norms, perceived behavioural control, positive and negative anticipated emotions, and the intention of acting in the future. The inclusion of desire enhances the model's effectiveness in predicting concrete behaviours (Perugini and Bagozzi, 2001).

3.2. Norm activation model

The Norm Activation Model (NAM) posits that individuals' actions are guided by a moral sense of obligation when they adhere to internalized norms (Schwartz, 1977). This model highlights three key factors that promote prosocial behaviour: personal norms, awareness of consequences (AC), and ascription of responsibility (AR) (Stern, 2000). Personal norms are activated when individuals recognize the negative outcomes of their actions, leading them to feel a sense of responsibility to act in a way that benefits society (Schwartz, 1977). Awareness of consequences describes how much a person acknowledges the possible negative impacts of their actions if they fail to behave pro-socially. Ascription of responsibility denotes the sense of personal accountability individuals feel for the negative consequences caused by non-prosocial behaviour (De Groot and Steg, 2009). This awareness and responsibility generate a moral obligation that motivates individuals to

adopt or avoid specific behaviours (Schwartz and Howard, 1981). Studies, such as that by Vaske et al. (2015), have demonstrated the effectiveness of NAM in explaining environmentally responsible behaviours. Furthermore, Joanes (2019) applied the NAM to analyse sustainable consumption in the fashion industry. In this context, the NAM is more effective than other theories, such as value-belief-norm (VBN). While VBN has a broader scope, its application is less suitable in contexts where moral norms are the primary drivers of behaviour. The strength of the NAM lies in its simplicity and specific focus on the elicitation of personal norms through the AC and AR constructs. This makes it particularly suitable for analysing altruistic and prosocial behaviours, especially when moral motivations play a decisive role (Schwartz and Howard, 1981). Owing to its targeted approach, the NAM offers high predictive accuracy in examining specific moral and environmental obligations, outperforming VBN theory in these contexts (Stern, 2000).

4. Research model and hypothesis development

4.1. Research model

This research seeks to investigate the elements that impact Generation Z's purchase of secondhand clothing. To offer a fuller perspective on their sustainable purchasing behaviours, we developed an integrated model based on the NAM and MGB frameworks. Previous research has shown that combining the TPB with the NAM enhances the comprehension of the factors that drive environmentally friendly actions (Zhang et al., 2017; Bamberg and Moser, 2007). Specifically, the Norm Activation Model (NAM) framework has been extensively employed to study the role of prosocial motives in environmentally responsible decision-making (Han et al., 2015). Pro-environmental behaviour, which is specifically regarded as a form of prosocial behaviour, generates positive outcomes for others and includes actions aimed at mitigating negative environmental impacts (Kollmuss and Agyeman, 2002; De Groot and Steg, 2010). Furthermore, MGB is particularly effective in analysing environmentally conscious actions. This framework focuses on intentional behaviour, highlighting the pivotal role of desires as motivational drivers that encourage ecological practices (Han et al., 2015; Odou and Schill, 2020). However, no prior study has investigated the integration of NAM and MGB to analyse the sustainable consumption of Generation Z in the fashion sector. Additionally, we propose an extended version of this integration by including the influence of price value (see Fig. 1 - Proposed model).

4.2. Effect of desire on intention to buy sustainable products

The MGB depicts the relationships among several factors, including attitudes towards behaviour, anticipated emotions (both positive and negative), subjective norms, PBC, desire, and the intention to act (Perugini and Bagozzi, 2001). In this framework, the concept of desire (DES) has been introduced to strengthen the model's predictive capability concerning behavioural intentions, serving as a vital motivational factor (Bagozzi, 1992). A key characteristic of the MGB is the significance of desire in predicting intention and its function in mediating the effects of attitudes, subjective norms, PBC, and anticipated emotions (Bagozzi, 1992). Perugini and Bagozzi utilize Davis's (2018) definition of "desire," which identifies it as encompassing two logically independent propositional attitudes known as "volitional" and "appetitive" desires. Both tendencies typically lead to action, extending from goals to means, and result in pleasure upon fulfilment. However, there are important differences: appetitive desire influences volitional desire rather than the other way around; volitional desire serves as a more accurate predictor of action, whereas appetitive desire relates to pleasure; and only volitional desires are grounded in reasoning, shaped by value judgements, or implied by intentions. Consumers are driven primarily by their desire to purchase products, with desire being regarded as the key motivator for decision-making (Perugini and Bagozzi, 2001).

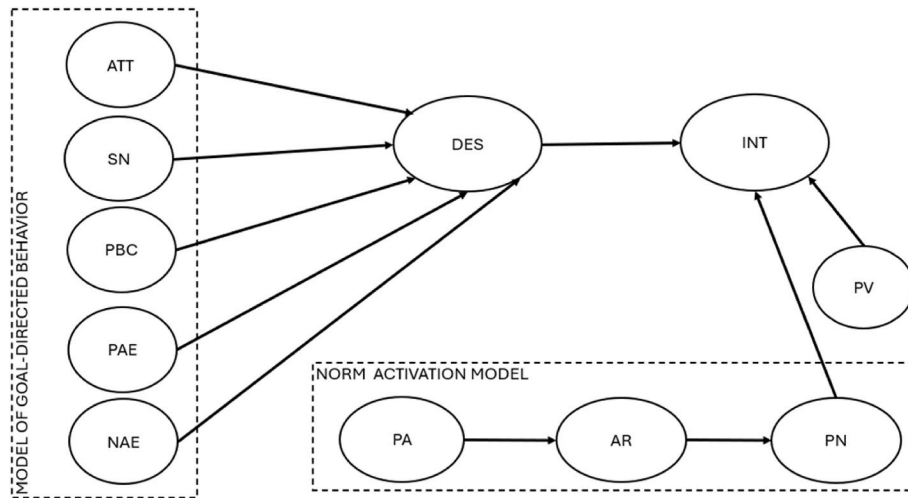


Fig. 1. The proposed model.

*ATT: Attitude, SN: Subjective Norms, PBC: Perceived behavioural control, PAE: Positive anticipated emotion, NAE: Negative anticipated emotion, DES: Desire, INT: Intention, PA: Problem Awareness, AR: Ascription of Responsibility, PN: Personal Norms, PV: Price Value.

Source: our elaboration.

Desire is essential in shaping behaviour, and converting intentions into sustainable actions (Ger et al., 1997). It is particularly important in guiding ethical behaviour (Sekerka and Bagozzi, 2007) and is essential in shaping choices connected to environmentally friendly purchasing decisions (Sekerka et al., 2015). Hence, we hypothesize the following:

H1. Desire has a positive influence on the intention to buy sustainable products.

4.3. Effect of personal norms on intention to buy sustainable products

According to NAM, personal norms (PNs) represent ingrained values (Schwartz, 1977) and manifest as self-imposed expectations, penalties, and commitments in the decision-making process (Kim and Seock, 2019). In exploring pro-environmental actions, individuals are influenced by personal perspectives within their consciousness and by assessments from themselves and others (Kim and Seock, 2019). The notion of personal norms, which refer to a personal internal ethical obligation to take action (Bai and Bai, 2020), is crucial in influencing both intentions and behaviours related to environmental actions (Zhang et al., 2018). In examining recycling behaviours, Tonglet et al. (2004) incorporated the concept of personal norms, underscoring the ethical and societal duties perceived by an individual in undertaking specific actions. The higher an individual's norms are, the greater the intention to buy recycled products. Hence, we assume the following:

H2. Personal norms have a positive effect on the intention to buy sustainable products.

4.4. Effect of attitude, subjective norms, and perceived behavioural control on desire

Unlike the Theory of Planned Behaviour (TPB), the Model of Goal-Directed Behaviour (MGB) posits that attitude, subjective norms, and perceived behavioural control do not directly influence an individual's intention to act. Instead, these components indirectly affect intention by shaping a person's motivation to engage in a specific behaviour (Prestwich et al., 2008). In the context of green purchasing behaviour, scholars have consistently demonstrated a positive relationship between attitude and desire (Kim et al., 2015). Furthermore, Lee et al. (2012) found that subjective norms significantly influence desire, while Lokhorst and Staats (2006) highlighted that perceived behavioural control enhances the strength of a person's desire to act.

Based on that, we propose the following hypothesis:

H3. Attitude has a positive influence on desire.

H4. Subjective norms have a positive influence on desire.

H5. Perceived behavioural control has a positive influence on desire.

4.5. Effect of positive and negative anticipated emotions on desire

The MGB expands on the TPB by incorporating the influence of anticipated positive emotions (PAEs) and negative emotions (NAEs) on desire. Gleicher et al. (1995) classified these emotional anticipations as key factors that shape both intentions and actions. It is widely acknowledged that the emotions people expect to feel when they engage in or avoid certain behaviours significantly influence their aims (Van der Pligt and De Vries, 1998). The equilibrium between the expectation of positive emotions resulting from reaching a goal and the negative emotions associated with failing to achieve it is essential in shaping desire (Perugini and Bagozzi, 2001). Leone et al. (2004) reported that these anticipated emotions influence the motivation to act, as they embody the hedonic drive to pursue positive outcomes while steering clear of negative ones. This reflects the common human tendency to consider emotional consequences—both success and failure—when pursuing goals (Bagozzi and Pieters, 1998). Therefore, we hypothesize:

H6. Positive anticipated emotions have a positive influence on desire.

H7. Negative anticipated emotions have a negative influence on desire.

4.6. Effect of problem awareness on ascribed responsibility

Problem awareness (PA) pertains to individuals' recognition of the positive and negative effects of an action (De Groot and Steg, 2009). As noted earlier, clothing purchases can lead to adverse consequences, and some consumers are cognizant of these effects, indicating their awareness of the negative outcomes. In this scenario, they may develop a sense of responsibility attribution, indicating an awareness of collective accountability regarding the negative consequences linked to the use of unsustainable products. Previous research has indicated that recognizing positive outcomes enhances the assignment of responsibility. For instance, De Groot and Steg (2009) identified a positive relationship between awareness of consequences and the attribution of responsibility regarding individuals' acceptance of particular products. Likewise,

Guagnano (2001) has substantiated this connection concerning the purchase of secondhand items. Therefore, we propose the following:

H8. Problem awareness positively affects ascribed responsibility.

4.7. Effect of ascribed responsibility on personal norms

Ascribed responsibility (AR) delineates an individual's perceived obligation concerning the outcomes of prosocial behaviours, as highlighted by De Groot and Steg (2009). This perception intensifies when individuals acknowledge a profound personal responsibility, feeling a moral imperative to act (Ghazali et al., 2019). As delineated by Steg and Nordlund (2018), the assignment of responsibility facilitates the formation of personal norms. This phenomenon is particularly pronounced in pro-environmental actions: an individual recognizing their mistake has an increased moral duty to halt the damage inflicted. Rezvani et al. (2017) illustrated how an increase in AR fosters the augmentation of PN. Within pro-environmental attitudes, ascribed responsibility empowers the individual to engage in ecological actions and, through their norms, promotes a lifestyle more attuned to environmental respect, as evidenced by Setiawan et al. (2021). The positive impact of ascribed responsibility on personal norms has also been supported by Munerah et al. (2021). Therefore, we propose the following:

H9. Ascribed responsibility positively affects personal norms.

4.8. Effect of price value on intention to buy sustainable products

The price value represents consumers' evaluative judgement, balancing the anticipated advantages of applications against their financial cost (Dodds et al., 1991). Studies on second-hand fashion highlight the role of economic factors, such as cost sensitivity and affordability, in shaping consumer behaviour (Williams and Paddock, 2003). Consumers often choose secondhand clothing to alleviate financial pressures, thereby meeting both essential and nonessential needs (Cervellon et al., 2012; Ferraro et al., 2016; Machado et al., 2019). Moreover, price attractiveness has been identified as a factor that positively influences attitudes towards purchasing secondhand luxury products (Turunen and Leipämaa-Leskinen, 2015; Yan et al., 2015). These findings suggest that concerns related to affordability and price perception influence purchase intentions in secondhand fashion. Therefore, it is hypothesized that recognizing a favourable trade-off between benefits and financial cost is correlated with a greater intention to invest in sustainable apparel. From this premise, the following hypothesis is advanced:

H10. Price value positively affects the intention to buy sustainable products.

5. Methods

To gather data, we utilized a survey incorporating prevalidated scales from the literature. Initially, we developed the questionnaire in English, followed by the application of translation and back-translation procedures to create the Italian version (Saunders et al., 2009).

Concerning the NAM, the constructs were measured with 12 items (3 items for PA, 4 items for AR, 2 for PN, and 3 for INT) adapted from Kim and Hwang (2020). The TPB constructs were measured by 9 items (3 items for ATT, 3 items for SN, and 3 items for PBC) adapted from Kim and Hwang (2020). The MGB constructs were adapted from Song et al. (2012). The DES was measured with 4 items: 4 items measured PAEs, and 4 items measured NAEs.

A seven-point Likert scale was adopted to assess the items and participants rated their agreement on a scale from 1 (complete disagreement) to 7 (complete agreement). The questionnaire is structured into three parts. To reduce social desirability bias, the first section provides instructions and information about the research objectives and the

gathering of information process and assures participants of their confidentiality and anonymity (Chidlow et al., 2015). The second section includes the survey items, where to counteract retrieval biases (Podsakoff et al., 2003), items from different constructs were interspersed across various scales. Finally, the third section gathers demographic information, such as gender and region.

5.1. Data collection and sample

The research aims to understand the elements that drive Generation Z to purchase secondhand clothing in Italy. To achieve this, a purposive sampling method was employed, focusing specifically on Generation Z (Gen Z), defined as individuals born between 1993 and 2012. We employed a purposeful sampling method to ensure that the selected participants possessed the specific characteristics required for our study (Creswell and Clark, 2017). Data collection was carried out through an online survey distributed across various digital platforms. The use of online platforms is particularly appropriate for reaching Generation Z, a demographic deeply engaged with the digital environment. Purposive sampling, which is commonly used in studies on consumer behaviour, is regarded as both a practical and valid methodological approach. The purposive sampling approach has been used in studies on consumer behaviour (Klein and Sharma, 2022). The survey was conducted across different regions of Italy to ensure more robust results, leveraging the shared cultural and behavioural characteristics of Italian Generation Z consumers (Kautonen et al., 2013). To guarantee the reliability and validity of the measurement scales, the survey was examined for accuracy by four expert professors. Their feedback led to a revision of the questions, improving their clarity and effectiveness. A pilot test was subsequently conducted with 30 participants from the target demographic to assess the face validity of the questionnaire. Once this preliminary phase was completed, the actual data collection began. The survey was conducted entirely online, using various platforms to maximize the number of participants and ensure broader distribution. Given that this research specifically targets Italian consumers, we selected a sample consisting solely of Italian respondents. Moreover, because the research focused on Generation Z, we considered respondents who were not older than 1993—Generation Z, individuals born from 1993 to 2012. From November 2023 to January 2024, we received 711 surveys, among which we considered only 457 completed surveys. Among the respondents, 58.2 % identified as male and 41.8 % as female. The demographic distribution revealed that 74 % were from a region in southern Italy, 12 % were from central Italy, and 14 % were from northern Italy.

5.2. Data analysis procedure

We assessed common method bias via the full-collinearity approach (Hair et al., 2023) and found no significant risk of bias, as the highest VIF was below the recommended threshold of 5 (Table 1). The research model was examined through PLS-SEM (Hair et al., 2023) with SmartPLS4. In comparison with other multivariate techniques, SEM permits the concurrent examination of constructs, enhancing its utility in understanding complex phenomena (Basile et al., 2023). Additionally, the absence of strict distributional assumptions for items and latent variables is advantageous in scenarios such as ours, where sample sizes are moderate (Hair et al., 2023). The latter methodology has been adopted in research concerning consumer behaviour (Troise et al., 2020; Chang and Hung, 2023) and investigations into ethical consumption (Sciarelli et al., 2021). The model's validity is evaluated in two phases: first, by assessing the robustness of the outer (measurement) model, and second, by examining the predictive power of the inner (structural) model (Hair et al., 2023).

6. Results

6.1. Measurement model

In PLS-SEM, assessing a measurement model entails four criteria: convergent validity, internal consistency, reliability, and discriminant validity (Hair et al., 2023). Specifically, convergent validity is determined by examining outer loadings (with an expected value higher than 0.60) and the average variance extracted (AVE, with an expected value greater than 0.50). Internal consistency and reliability are assessed through composite reliability (CR) and Cronbach’s alpha, both of which should exceed 0.7. Discriminant validity is evaluated using the HTMT ratio, with acceptable values of less than 0.85 for different constructs and less than 0.90 for analogous constructs. In our analysis, the data met the criteria for convergent validity, internal consistency, reliability, and discriminant validity (see Table 1, and Table 2).

To examine the robustness of the structural model, we assessed the coefficient of determination (R^2), the predictive relevance (Q^2), and the

f^2 effect size (see Table 1). The R^2 values for all the dependent variables are above the threshold of 0.26, as Cohen (1988) recommended, demonstrating the model’s reliable predictive power. This conclusion is further reinforced by the Q^2 values of predictive relevance, which are greater than 0 for all the dependent variables. This result shows the structural model’s satisfactory predictive relevance in explaining the dependent variables. Concerning f^2 , the general guidelines for assessing f^2 suggest that values of 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes, respectively (Cohen, 1988; Hair et al., 2023). Effect sizes are valuable because they indicate how strongly an external variable impacts an internal one. Following this initial evaluation, we employed a bootstrap procedure with 5000 resamples (Hair et al., 2023), and a two-tailed test was performed to test our hypotheses. The outcomes of this procedure are presented in Table 3. All hypotheses are supported, except for H5. The model after testing (Fig. 2).

Table 1
Indicator reliability, construct reliability, convergent validity and construct R^2 .

Constructs	Items	Outer loading	Cronbach’s alpha	CR	AVE	R^2	Q^2	VIF
Ascribed Responsibility	AR1	0,834	0,898	0,935	0,829	0,296	0,295	1000
	AR2	0,955						
	AR3	0,937						
Attitude	ATT1	0,852	0,779	0,868	0,687			2449
	ATT2	0,810						
	ATT3	0,824						
Desire	DES1	0,833	0,813	0,877	0,641	0,657	0,649	1516
	DES2	0,790						
	DES3	0,738						
	DES4	0,837						
Negative anticipated Emotion	NAE1	0,939	0,950	0,964	0,870			1368
	NAE2	0,949						
	NAE3	0,910						
	NAE4	0,931						
Problem awareness	PA1	0,949	0,958	0,973	0,922			1000
	PA2	0,972						
	PA3	0,960						
Positive anticipated emotion	PAE1	0,905	0,897	0,928	0,764			2744
	PAE2	0,843						
	PAE3	0,901						
	PAE4	0,844						
Perceived behavioural control	PBC1	0,910	0,818	0,892	0,734			1237
	PBC2	0,880						
	PBC3	0,775						
Personal norms	PN1	0,818	0,768	0,864	0,679	0,407	0,305	1451
	PN2	0,761						
	PN3	0,888						
Price Value	PV1	0,879	0,805	0,884	0,717			1290
	PV2	0,874						
	PV3	0,785						
Subjective norms	SN1	0,934	0,924	0,952	0,869			1305
	SN2	0,962						
	SN3	0,900						
Intention to buy	INT1	0,855	0,873	0,922	0,798	0,322	0,331	
	INT2	0,881						
	INT3	0,942						

CR: Composite Reliability (CR > 0,70).

AVE: average variance extracted (AVE >0,5).

R^2 : Coefficient of determination. ($R^2 > 0,26$).

Q^2 : Stone–Geisser ($Q^2 > 0$).

Table 2
Discriminant validity (heterotrait–monotrait ratio).

	AR	ATT	DES	NAE	PA	PAE	PBC	PN	PV	SN	INT
AR											
ATT	0,491										
DES	0,302	0,871									
NAE	0,228	0,411	0,522								
PA	0,564	0,593	0,321	0,265							
PAE	0,471	0,885	0,891	0,493	0,481						
PBC	0,286	0,521	0,469	0,289	0,21	0,452					
PN	0,701	0,788	0,673	0,516	0,687	0,769	0,372				
PV	0,228	0,388	0,529	0,364	0,157	0,532	0,52	0,494			
SN	0,23	0,307	0,454	0,428	0,194	0,453	0,195	0,487	0,351		
INT	0,341	0,493	0,486	0,451	0,394	0,598	0,527	0,518	0,575	0,311	

Table 3
Testing of the hypotheses.

Hp	Relationship	Original sample (O)	Sample mean (M)	STDEV	T statistics	P values	Support	Effect size
H1	DES -> INT	0,159	0,162	0,053	2984	0,003	Yes	0,025
H2	PN -> INT	0,211	0,211	0,053	3,97	0	Yes	0,046
H3	ATT -> DES	0,303	0,306	0,059	5,13	0	Yes	0,11
H4	SN -> DES	0,078	0,079	0,027	2934	0,003	Yes	0,014
H5	PBC -> DES	0,053	0,055	0,029	1803	0,071	No	0,007
H6	PAE -> DES	0,441	0,436	0,06	7396	0	Yes	0,209
H7	NAE -> DES	0,109	0,11	0,031	3472	0,001	Yes	0,026
H8	PA -> AR	0,546	0,547	0,041	13,415	0	Yes	0,424
H9	AR -> PN	0,639	0,641	0,024	26,167	0	Yes	0,69
H10	PV -> INT	0,342	0,343	0,053	6516	0	Yes	0,135

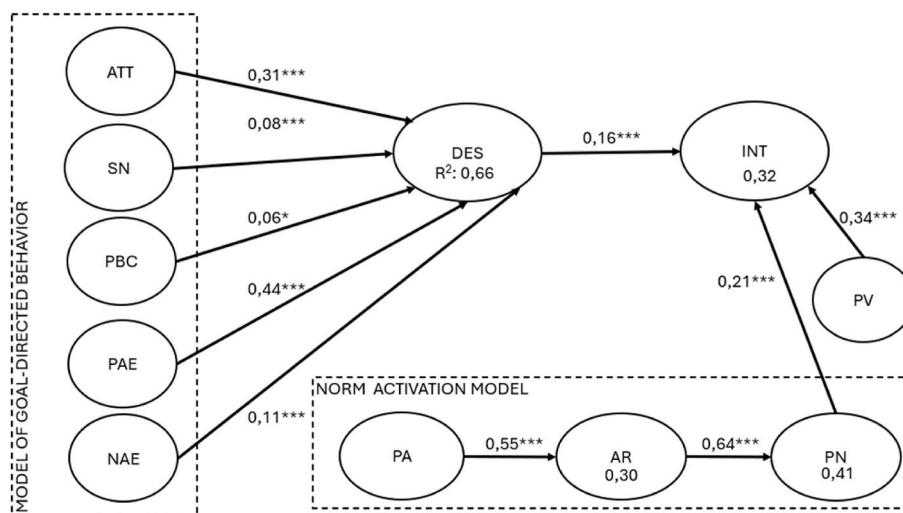


Fig. 2. Model after testing.

*P value < 10 %.

**P value < 5 %.

***P value < 1 %.

Source: our elaboration.

7. Discussions

This research seeks to understand the elements influencing Generation Z's intention to purchase secondhand clothing. We integrated the NAM and MGB to develop an innovative model to explain Generation Z's intention to buy secondhand clothing. Our analysis considers factors that positively affect a person's inclination to purchase secondhand clothing, including PN, ATT, PAE, NAE, SN, AR, DES, and PA. We also investigated how PV influences the intention to buy secondhand clothing. This study reveals intriguing findings that both align with and challenge prior research. Consistent with earlier research (Ger et al., 1997; Zhang et al., 2018; Bai and Bai, 2020), our results support both H1

and H2, showing that DES and PN each have a positive effect on purchase intentions. The results demonstrate that Generation Z is willing to buy sustainable products if they are environmentally sensitive and want to buy secondhand clothes. According to our findings, both attitudes and subjective norms positively affect desire, confirming H3 and H4. However, contrary to the results of Perugini and Bagozzi (2001), our study did not find a substantial effect of perceived behavioural control on desire, resulting in the rejection of H5. This result demonstrates that Generation Z's desire to purchase sustainable products depends on the social pressures they face and on the consideration of the subjects they consider relevant to the purchase of secondhand clothing. The absence of a strong impact from PBC may be attributed to its relationship with

the apparent simplicity or challenge of executing the behaviour. In the context of purchasing secondhand clothing, which is a simple action for Generation Z, it is not a decisive variable influencing the desire to purchase sustainable secondhand clothing. Moreover, both H6 and H7 are confirmed, showing that PAEs influence DES for secondhand clothes. This finding indicates that Generation Z's positive anticipated feelings lead to their intention to buy secondhand clothes. NAEs significantly influence DES for secondhand clothes, suggesting that Generation Z's negative anticipated feelings affect their eagerness to buy them. The intention to purchase sustainable products depends on the price value, as demonstrated by the acceptance of H10, and on aspects related to the decision-maker's morality. The NAM allows the value aspects of the decision-maker, such as PA and AR, to be included in the model. Consistent with prior research, our findings validate the positive effect of PA on AR (H8) (Guagnano, 2001; De Groot and Steg, 2009) as well as the positive effect of AR on PN (H9) (Rezvani et al., 2017). Within the sphere of pro-environmental behaviour, the results show that it is fundamental that Generation Z is aware of the environmental issue and feels partly responsible so that it can be oriented towards sustainable purchasing choices.

8. Implications

8.1. Theoretical implications

Theoretically, this study is among the initial attempts to explore the elements that influence driving Generation Z's intention to purchase secondhand clothing by combining the NAM and MGB models, with an added focus on price value. This research provides multiple advancements to existing scholarly work. Initially, it enhanced earlier research focused on personal actions by integrating the NAM with the MGB, which was deemed crucial in forecasting pro-environmental behaviour. Integrating both models as a holistic strategy has proven more effective in forecasting consumer purchase intentions. We present a novel approach for examining consumers' intention to buy sustainable products in an eco-friendly fashion. Furthermore, beyond integrating the two models, this study has expanded the literature on green purchasing behaviour by demonstrating how people belonging to a generation with a heightened sustainability consciousness tend to be more mindful of companies' sustainability practices. This indicates how age is a significant factor in making purchasing decisions related to sustainability.

8.2. Practical implications

This study has interesting practical implications. First, the data analysis revealed that certain variables from the NAM and MGB are significantly and positively associated with environmentally responsible purchasing behaviour. This suggests that the sustainable purchasing behaviour of Generation Z depends on different factors, including their personal values or the influence of close contacts such as friends, family, or influencers. Fashion companies should first aim to cultivate value-based content in consumers through green advertising efforts to enlighten them about their environmental role and foster their sense of moral obligation. Thus, green advertisements emerge as an effective method to invoke the moral duty of consumers in the context of clothing purchases. Additionally, as data analysis supports the sequential mechanism of problem awareness and assigned responsibility in shaping personal norms, these advertisements are recommended to deliver messages that not only promote moral principles but also highlight the detrimental consequences of current clothing production and disposal practices, emphasizing both environmental and consumer responsibility to diminish pollution. By doing so, businesses adopting sustainable production and disposal practices in the fashion sector will likely be prioritized in the garment purchasing decision. Furthermore, to assist customers in identifying eco-friendly products, it is recommended that environmental labelling strategies be adopted. This is because eco-

conscious brands can elicit positive responses from specific demographics by highlighting their products' eco-friendly aspects. While this study highlights the potential of secondhand fashion for engaging Generation Z, several practical challenges remain. These include the high costs of adopting circular economy practices, consumer misconceptions about secondhand clothing quality and hygiene, logistical complexities in restructuring supply chains, and the gap between Generation Z's intentions and actual purchasing behaviours. Therefore, some practical challenges concern a) the cost and accessibility of sustainable options; b) consumer perception and education; c) operational barriers for businesses; and d) the behaviour-intensity gap. Addressing these challenges will require targeted consumer education, affordable pricing strategies, and operational innovations to increase accessibility and scalability. Below are examples of how recycled fashion retailers address these challenges and successfully engage Generation Z:

- ✓ ThredUp: Collaborates with influencers and celebrities on social media platforms such as TikTok and Instagram to promote sustainable fashion.
- ✓ Depop: Offers a community-driven marketplace featuring vintage and unique items, appealing to Gen Z's individuality and sustainability values.
- ✓ Patagonia: Runs the Worn Wear program and resells repaired used clothing, highlighting quality and environmental stewardship.
- ✓ Levi's: Promotes its SecondHand platform and in-store tailoring services to extend product life, aligning with Gen Z's eco-conscious preferences.
- ✓ Urban Outfitters: Markets its "Urban Renewal" line of upcycled and vintage fashion, emphasizing creativity and sustainability.

These initiatives reflect strategies employed by retailers to connect with Generation Z's values of sustainability, affordability, and uniqueness, thereby encouraging their engagement with recycled fashion merchandise.

9. Limitations and future research

The research analyses an Italian sample; future research could test the model in other countries. In addition, the study investigates the intention to purchase secondhand clothing without measuring the extent to which Generation Z is prepared to spend. Future research could use a revealed preference approach to delve deeper into this aspect. One limitation of this study is its focus on the intention to purchase secondhand clothing rather than actual purchasing behaviours. While the integrated NAM and MGB frameworks provide robust insights into the motivational and attitudinal factors influencing Generation Z, intentions do not always translate into real-world actions. This discrepancy may arise from external constraints such as financial barriers, situational limitations, or accessibility issues. Future research could address this gap by employing longitudinal studies or incorporating behavioural data, such as tracking actual purchasing patterns through surveys or digital transaction records. Such an approach would enhance the real-world applicability of the results and offering a deeper insight of sustainable consumption behaviours in the secondhand fashion market. Moreover, one additional limitation of this research depends on self-reported data, which could lead to potential issues, like social desirability bias, where individuals tend to respond in a way that aligns with perceived social norms rather than their true thoughts or behaviors, and halo error, where general impressions may unduly influence specific responses. Finally, two additional aspects that could influence intention are brand identity and prior experience. Brand identity, particularly its connection with younger individuals, may significantly shape their intention to purchase secondhand clothing. Future research could delve deeper into the extent to which brand identity fosters or hinders this behaviour. Additionally, the role of prior experience with purchasing second-hand products presents another critical factor. Such experiences

may directly affect Generation Z's willingness and motivation to engage in secondhand shopping. Exploring how these experiences influence attitudes and intentions could provide valuable insights for future studies.

10. Conclusions

This research offers important insights into the factors that shape Generation Z's intention to buy secondhand clothing, with a focus on sustainable fashion (Kim and Seock, 2019). By integrating the NAM and the MGB, this study highlights how individual norms, attitudes, emotions, and external social influences drive the sustainable consumption decisions of this environmentally conscious generation. The findings indicate that Generation Z's interest in purchasing secondhand clothing is primarily influenced by moral values, social pressures, and anticipated emotions, both positive and negative. Surprisingly, perceived behavioural control did not significantly impact their purchasing intentions, which may be explained by the relatively easy access that Generation Z has to secondhand clothing. Furthermore, the study highlights the significant role of price value in influencing their purchasing choices. Practically, this research suggests that fashion companies should align their marketing and branding efforts with sustainability values, focusing on moral obligation and ecological responsibility to resonate with Generation Z (Chae et al., 2024). Green advertising, eco-labelling, and highlighting the environmental impact of products could enhance their

engagement in a sustainable fashion. Future research could explore this model in other cultural contexts, examine the influence of brand identity, and delve deeper into Generation Z's willingness to pay for sustainable fashion (Johnstone and Lindh, 2022).

CRedit authorship contribution statement

Anna Prisco: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Irene Ricciardi:** Writing – review & editing, Writing – original draft, Methodology, Data curation. **Martina Percuoco:** Writing – review & editing, Writing – original draft, Methodology, Data curation. **Vincenzo Basile:** Writing – review & editing, Supervision, Investigation, Data curation.

Declaration of competing interest

We have no conflicts of interest to disclose.
All Authors have read and approved the final version.

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Appendix A. Items list

CONSTRUCT	ITEM	ITEM	REFERENCE
Desire	DES1	I would like to buy second-hand clothes.	Song et al. (2012)
	DES2	I want to have fun when shopping for second-hand clothes.	
	DES3	I hope to continue buying second-hand clothes.	
	DES4	I want to create unforgettable memories while shopping for second-hand clothes.	
Positive anticipated emotion	PAE1	If I buy second-hand clothes brands, I will be excited.	Kim & Hwang (2020).
	PAE2	If I buy second-hand clothes, I will be glad.	
	PAE3	If I buy second-hand clothes, I will be satisfied.	
	PAE4	If I buy second-hand clothes, I will be happy	
Negative anticipated emotion	NAE1	If I buy second-hand clothes, I will be angry.	
	NAE2	If I buy second-hand clothes, I will be disappointed.	
	NAE3	If I buy second-hand clothes, I will be worried.	
	NAE4	If I buy second-hand clothes, I will be sad.	
Attitude	ATT1	I like the idea of buying second-hand clothes.	
	ATT2	Buying second-hand clothes is a good idea.	
	ATT3	I have a positive attitude toward buying second-hand clothes.	
Subjective norm	SN1	Most people who are important to me think I should use an environmentally friendly way, such as buying second-hand clothes.	
	SN2	Most people who are important to me would want me to use an environmentally friendly way, such as buying second-hand clothes.	
	SN3	People whose opinions I value would prefer that I use an environmentally friendly way, such as buying second-hand clothes.	
Perceived behaviour control	PBC1	Whether or not I use an environmentally friendly way, such as buying second-hand clothes when I buy apparel is completely up to me.	
	PBC2	I am confident that if I want, I can use an environmentally friendly way, such as buying second-hand clothes when I buy apparel.	
	PBC3	I have resources, time, and opportunities to use an environmentally friendly way, such as buying second-hand clothes when I buy apparel.	
Problem awareness	PA1	The current textile industry causes air pollution.	
	PA2	The current textile industry has a negative impact on global warming.	
	PA3	The current textile industry leads to environmental pollution.	
Ascribed responsibility	AR1	I believe that consumers are partly responsible for environmental problems potentially caused by the current textile industry.	
	AR2	I feel that consumers are jointly responsible for the environmental deterioration potentially caused by the current textile industry.	
	AR3	I believe that every consumer is partly responsible for the environmental problems caused by the current textile industry.	
Personal norm	PN1	I feel an obligation to choose an environmentally friendly way, such as buying second-hand clothes when I buy apparel.	
	PN2	Regardless of what other people do, because of my values/principles, I feel that I should buy second-hand clothes when I buy apparel.	
	PN3	I feel it is important that consumers behave sustainably when buying clothes.	

(continued on next page)

(continued)

CONSTRUCT	ITEM	ITEM	REFERENCE
Intention to buy	INT 1	I will buy second-hand clothes.	Venkatesh et al. (2012)
	INT 2	I am willing to buy second-hand clothes.	
	INT 3	I am likely to buy second-hand clothes.	
Price Value	PV1	Second-hand clothes are reasonably priced	Venkatesh et al. (2012)
	PV2	Second-hand clothes are good value for the money.	
	PV3	At the current price, second-hand clothes provide great value.	

Data availability

Data will be made available on request.

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