that it contributes to total global emission around 5% (Bauck, 2017). Global climate change and environment protection policies enforced manufacturers to adopt environmental procedures and practices. Organizations in EM find managing corporate environmental sustainability a challenging task as they are required to act and behave responsibly towards the environment while focusing on its economic goals (Gupta et al., 2018) with the help of their human resources. In India considering the usage of water, regulatory authorities have enforced wastewater treatment and discharge standards. Therefore, organizations are forced to opt for more sustainable solutions. Some of the innovative sustainable solutions are zero liquid discharge solution, recycling water. Organizations have to frequently develop different strategies to survive in business competition in EM, for example, General Electric Healthcare (an American Multinational) uses different strategies as they make software for diagnostic machines in India and their parts in China, Hungary, and Mexico. Home Depot (headquartered in Georgia, US) is another example of an organization that used different strategies for different markets such as they set up stores in Chile and Argentina markets but failed. Later with the help of greenfield strategy, they entered Mexico successfully and they have been exploring new emerging markets. Hence, there lies the need to innovate. It can be business model innovation, product innovation, or process innovation.

The innovation literature is categorized into: (1) studies related to the process (for instance: Ziegler and Nogareda, 2009; Rennings et al., 2006); (2) studies related to the relationship between innovation and policies (for instance: Demirel and Kesidou, 2011; Kemp and Pontoglio, 2008). Manufacturing products that do not contain dangerous and toxic substances are crucial for organizations today considering global climate change and to raise environmental awareness, hence green innovation has become important and a critical factor for organizations (Chiou et al., 2011; Lin and Chang, 2009). According to Calza et al. (2017) Green innovation refers to the innovative approaches adopted by industries to shift their traditional practices into sustainable operations. Green innovation can be further of different types: product, process or managerial innovation (Chen, 2008). In this study, we have focused on product innovation and not on the processor managerial because an understanding of the determinants and consequences of product innovation is very limited (Kurkkio et al., 2011). Hence, in the context of textile manufacturing industries, the antecedents and consequences of innovation are crucial to understanding.

The pattern of shared basic assumptions about environmental management and problems is defined as green organizational culture (Marshall et al., 2015; Schein, 2010). These assumptions or beliefs values regarding environmental management shape the behaviours of individuals and the green culture has been found to have a positive influence on green innovation (Chang, 2015). Furthermore, organizations with adaptability or adaptability culture take risks and learn from mistakes and have the capability and experience to create change (Denison, 2000; Senge, 1990). These organizations can reform themselves to meet the changing market demands (Eisenhardt and Martin, 2000). Hence, it can be said that organizational culture influence creativity and innovation (Martin and Terblanche, 2003) that can further increase the performance (Danneels, 2002) specifically, green performance.

A key competitive advantage for any organization is human resource management (HRM) (Sun et al., 2007) as it affects the performance of the organization through its influence on employee organizational commitment (Nishii et al., 2008). Employee organizational commitment is a predictor of performance (Caillier, 2012; Anderfuhren-Biget et al., 2010) as employees committed to a particular organization devote more effort to their job. Organizations when using HRM policies to encourage the sustainable use of the resources and promotes the cause of environmentalism to boost employee morale and satisfaction is described as green HRM (GHRM) (Mampra, 2013). Additionally, they feel strongly about the environment as employees today are more committed as well as satisfied with the organization that is proactive in endorsing green (Ahmad, 2015). To reduce environmental degradation and wastage, international organizations, academicians, and policies framed nationally are focusing on the importance of green initiatives (Rahman et al., 2020). Moktadir et al. (2019) explored several antecedents such as green organizational culture, top management commitment for the implementation of GHRM practices (Kumar et al., 2020) also stated that organizational culture is the most influencing behavioural factor, followed by 'commitment from higher authority'. According to Ng et al. (2010), higher organizational commitment at all levels from senior management to people of the show floor leads to higher innovative work behaviour but there is a lack of empirical research related to it (Jafri, 2010) especially in the Asian context (Nguyen et al., 2019). Hence, exploring the role of employee commitment in innovation is crucial and therefore this work addresses the following research question:1) what are the major precursors of innovation in the textile industry? 2) what are the major outcomes of innovation in the textile industry? and 3) what is the role of employee commitment in innovation?

Green capabilities have been found as an antecedent of green product innovation (Chen et al., 2012). While current literature comprises various internal and external organizational factors, in this study we have focused on the internal organizational factors as this study focuses on the internal variables such as adaptability of green culture inside the organization and commitment of employees. One of the key antecedents of green product innovation is corporate environmental ethics and culture (Keskin et al., 2013; Chen et al., 2012; Dangelico and Pujari, 2010). In response to the change in the external business environment with flexibility, the adaptability culture has a high potential to change internally (Denison and Mishra, 1995) which contributes to organizational innovation (Daft, 2007) which is important for the firm performance (Danneels, 2002; Cooper and Kleinschmidt, 1995; Brown and Eisenhardt, 1995). It has been found that any improvement made in environmental commitment will affect green innovation as they are related to each other (Keogh and Polonsky, 1998). Additionally, a corporate culture that encourages environmental commitment throughout the company helps in attaining green innovation which can be achieved by setting clear environmental targets, criteria and practices (Dangelico, 2016). Hence, The current study identifies the adaptability of green culture as a major antecedent and green performance as an outcome of innovation. The following objectives have been set for the study based on the literature:

- To find the relationship between adaptability culture and innovation.
- To find the relationship between innovation and green performance
- To test the mediating role of employee commitment between innovation and green performance.

The paper is structured as: firstly, the literature review has been presented along with the hypothesis for the study. In the next section, research methodology has been discussed followed by analysis. The next section is a discussion and implication in which theoretical and practical contributions, as well as managerial implications, have been discussed. The last section presents the conclusion, limitations and future research directions of the study.

2. Literature review

According to Chang (2011), industrial competition patterns are changed due to two environmental pressures i.e., environmental regulation and consumer environmentalism. Therefore, organizations have to change their processes, products and even business models. Developing environment-friendly products and processes by adopting organizational practices such as the use of few or green raw material that aims at reducing the water consumption, emissions (Albort-Morant et al., 2017; Gunasekaran and Spalanzani, 2012) is defined as green innovation. According to Howard-Grenville (2006), successful implementation of green innovation can be achieved by leading organizations and employees through green organizational culture. According to Harris and Crane (2002) Green organizational culture is defined as the set of assumptions, values, symbols, artefacts of an organization that reflected a desire or need to operate in an environmentally sustainable manner. Hence, the culture of the organization is considered green, when the employees seek to reduce the profit-seeking purposes and encourage organizational action's that have a positive influence on the environment (Roscoe et al., 2019). As culture has been found a predictor of innovation but empirical studies on this are limited. Either the studies have focused on the cultural element (Lin et al., 2013; Buschgens et al., 2013) or have pointed to the need for empirical studies (Nakata and Di Benedetto, 2012). Further, what type of culture is effective and can help in innovation and employee behaviour is still not clear. Concerning improvement in organizational performance, several studies have focused on innovation that helps in enhancing it (Koc and Ceylan, 2007). But despite having a wide scope of innovation in the literature scholars pay less attention to green innovation (Gürlek and Tuna, 2017; Lin et al., 2013; Chen et al., 2006). Based on the literature review it was found that there are studies that have focused on service and manufacturing industries in western countries but there is very less attention given to green innovation specifically textile industries in India. The present study aims to bridge this gap by exploring the antecedents and consequences of innovation as pointed by Crossa and Apaydin (2010) that to advance the research on innovation it is important to test the relationship between innovation determinants and their outcomes. Therefore, the literature review is looking into three aspects such as adaptability culture and innovation, innovation and green performance and the mediating role of organizational commitment.

2.1. Conceptual framework and hypothesis development

2.1.1. Adaptability culture and innovation

"Adaptive culture" (Kotter and Heskett, 1992) has been described as the range of cultural attributes that enables an organization to become more adaptive to environmental changes by helping "organizations anticipate and adapt to the environmental change". One of the essential features of an organization in the contemporary environment identified in competitive sustainability (Wei and Lau, 2010) is adaptability. Hence, to survive and compete, organizations must understand the importance of cultural adaptability (Schein, 1992). The research on green innovation has been growing over the past few years (Dangelico, 2016). Due to increasing social and political pressures organizations are gradually creating an environment that is more adaptive as well as contributes to the green innovative products (Song et al., 2020). Organizational adaptive culture can facilitate its innovation (Woodman et al., 1993) and the culture of the organization is one of the critical factors for innovation performance (Herbig and Dunphy, 1998). If any organization have an adaptive culture then they have a high potential to change internally concerning a change in the external conditions (Denison and Mishra, 1995). The working environment or the organizational culture encourages or influences the innovation capacity of the employee and the organizations that are engaged in continuous innovation and development of knowledge and capabilities can enhance their performance as developing a new product is a precursor to organizational performance (Chan et al., 2017). The adaptation of green culture depends on three key factors: managerial, internal and external (Law and Gunasekaran, 2012). Managerial includes mindset or strategic policies; internal includes the system and performance and external factors include competition, market trends, law and regulations. The different influence level of these factors within an organization determines their adaptation level to sustainable development. Hence, we propose that:

H1. There exists a relationship between adaptability culture and innovation

2.1.2. Innovation and green performance

The adoption of green practices would result in the improvement of green/environmental performance (Zhu and Sarkis, 2004). According to Olsthoorn et al. (2001) Green performance is defined as the measurement of the interaction between the business and the environment. Product innovation can be the idea generation or creating something new that is reflected in the changes made in product or services by the organization (Prajogo and Ahmed, 2006). Earlier studies have found a relationship between innovation and performance and clearly defines the importance of innovation for the firm's performance (Danneels, 2002; Cooper and Kleinschmidt, 1995; Brown and Eisenhardt 1995). This can be explained further with the help of various empirical studies on green innovation that have stated performance as the major outcome specifically, environmental performance (Singh et al., 2020; Huang and Li, 2017; Kucukoglu and Pinar, 2015; Weng et al., 2015; Alhadid and As'Ad, 2014; Chiou et al., 2011) and firm performance (Zhang et al., 2019; Tang et al., 2018; Handayani et al., 2017; Lin et al., 2013). Additionally, there exists a relationship between environmental innovation and performance (Carrion-Flores and Innes, 2010), green innovation and business performance (Gluch et al., 2009), eco-innovation activities and market performance (Pujari, 2006). Based on the above discussion, we assume that innovation has an association with green performance. Hence, this study hypothesizes that.

H2. There exists a relationship between innovation (green product) and green performance.

2.1.3. Mediating role of commitment

Employee commitment refers to the intentions to behave in some way that is beneficial to the organization. Further, according to Klien et al., this area of study has a long history but in the environmental sustainability context, it was first explored by Polonsky in 1998. Hence, the environmental aspect recently emerges as a research focus. In this study, we have focused on the affective commitment of employees. Innovation initiatives by employees rely on their commitment (Youndt et al., 1996). Employee commitment has a positive relationship with turnover (Steers, 1977). Employees with less commitment only show the required behaviours for employment (Riketta, 2002). Also, employees can go beyond their regular responsibilities if they are proud to work for the organization hence, demonstrate employee commitment and these committed employees are often loyal that results in better performance (Allen and Shanock, 2013; Jaworski and Kohli 1993). Employees commitment to the environment rely on their desire to share and care about the environmental concerns of their organization (Paille and Valeau, 2020). Hence, Organizational green goals

can be achieved if the employees are committed. It has been found that higher levels of employee commitment led to enhanced organizational performance (Arthur, 1994; Owens 2006) and also increase organizational productivity. Additionally, top management commitment towards the environment influences their employee commitment (Aguinis and Glavas, 2012). In brief, employee commitment to change (here, adopt green behaviour) is important for the operational process of an organization and its ability to innovate product that satisfies the environment and market need (Hasu et al., 2014). Employee commitment to change positively influence their perceptions which in turn improves performance (Nohe et al., 2013). Conversely, without commitment, the innovation may be difficult to achieve (Herscovitch and Meyer, 2002) and it will affect the performance. Based on the above discussion, we propose that.

H3. Commitment mediates the relationship between innovation and green performance

H3a. : There exists a relationship between innovation and commitment

H3b. : There exists a relationship between commitment and green performance

Fig. 1 proposes a conceptual framework for the study which shows the relationship between adaptability culture, product innovation, commitment and green performance.

3. Research methodology

The research methodology framework for the study has been presented in Fig. 2. Initially, problem identification and literature review have been conducted (described in Section 1, 2 and 3) related to adaptability culture, innovation, green performance and commitment in the textile industry. Then, a structured questionnaire has been used for data collection from the middle-level employees working in textile manufacturing organizations in India. Further, the assessment of the model has been carried out such that for measurement model assessment: unidimensionality was checked using exploratory factor analysis. Internal consistency reliability was checked using Cronbach's alpha and composite reliability. Indicator reliability has been checked using indicator loading. Convergent validity was checked using Average variance extracted while discriminant validity was checked using cross-loadings, Fornell-Larcker criterion and$HTMT_{0.85}$criterion. Further, indicator validity was checked using indicator weights and variance inflation factor (VIF), construct validity using inner construct correlations. For structural model assessment: Model validity has been assessed using the coefficient of determination (R^2), Path coefficients and T value, effect size (f^2), Predictive relevance (Q^2), goodness of fit index, standardized root mean square residual. After model validation, hypothesis testing results have been presented and interpreted.

3.1. Questionnaire design

A structured questionnaire has been designed to collect the data through paper and pen survey. It comprises of two sections: A and B. Section A consists of demographic details of respondents such as age, educational qualification and gender, while section B comprises the constructs used in the study. The minimum sample size for the pilot study can be thirty or above (Browne, 1995). As some items of the scale have been modified therefore a pilot study of thirty-seven respondents were collected from industry professionals as well as from the academicians. After making the relevant language correction and modifications based on the suggestion received, the final questionnaire was then used for data collection.

3.2. Variables and measurement

Green Performance has been used as a dependent variable. It has been measured using Yu et al. (2017) nine-item scale (for instance: our firm conforms with requirements of inputs of energy) Adaptability culture has been measured using three items from previous studies (Denison and Mishra, 1995; Lau and Ngo, 2004) (for instance: The culture of this firm can be regarded as flexible). Innovation, here product innovation has been used. Green product innovation has been measured using Chang (2019); Chen (2008); Chen et al. (2006); scale having three items (for instance: The enterprise uses materials with the least pollution during the process of product development, design, or production). Employee commitment towards the environment has been measured using three items (the modified scale that has been developed by Raineri and Paillé, 2016) (for instance: I care about the environmental concern of my organization). All the items were measured on a five-point Likert scale. The items for each construct have been mentioned in Table 2.

3.3. Sample and data collection

The questionnaire was sent to textile manufacturing organizations in the Delhi National Capital Region (NCR). A representative of each organization was given two questionnaires. The questionnaire

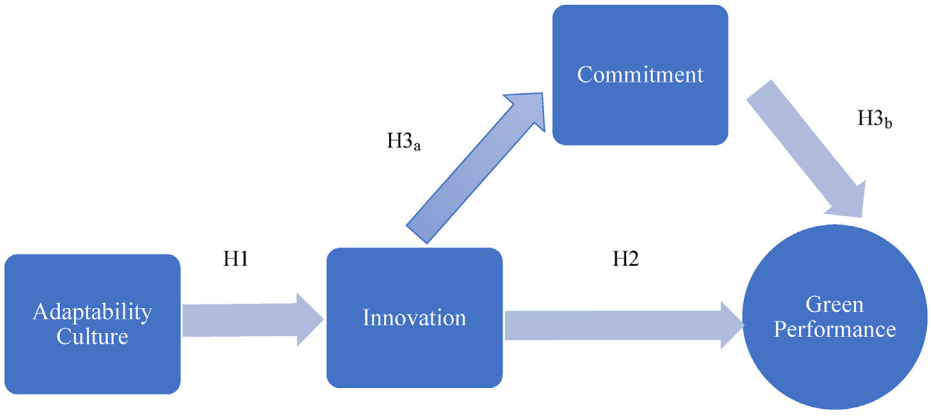

Fig. 1. Proposed conceptual model.

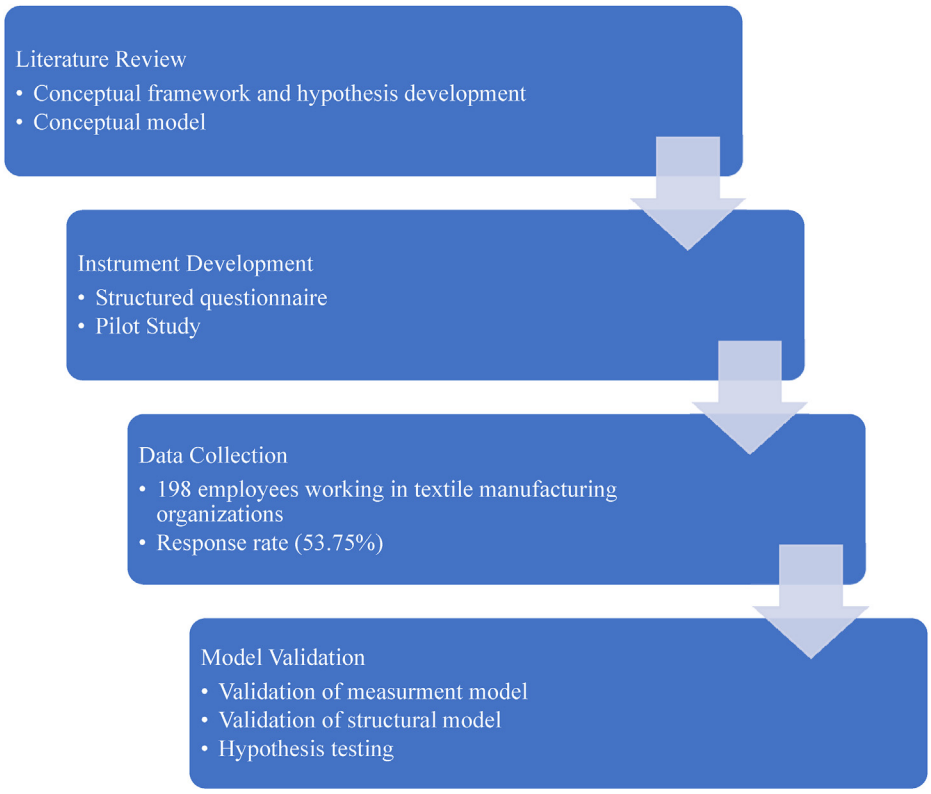

Fig. 2. Research methodology framework.

was attached with a cover letter that elucidates the study objective along with the guidelines and instructions to fill it. Data was collected between August 2019 to January 2020, and to collect the data snowball sampling method (Johnson, 2014) was used as it was hard to approach the senior managers for the researcher. A total of 215 questionnaires were collected (response rate of 53.75%). Out of 215 questionnaires, only 198 were used for further analysis due to incomplete information provided by the respondents. Based on the minimum sample size estimation method of the "10 times rule" in PLS-SEM (Hair et al., 2011), 198 is acceptable sample size for the present study. Table 1 shows the respondents details.

4. Analysis

Partial least square equation modeling technique has been used by SmartPLS 3.3.2, the results are shown in Fig. 3. PLS is recommended for a small sample size (Agarwal and Karahanna, 2000) and is widely accepted as a method for testing research model (Zhu et al., 2012) at early stages which have not been used extensively, therefore, we have used this technique. Model reliability and validity are shown in Tables 2 and 3. Composite reliability values should be greater or equal to 0.7 to be reliable (Hair et al., 2014). Table 2 reveals that the composite reliability value is 0.88 for commitment, 0.93 for green performance, 0.93 for adaptability culture and 0.83 for innovation. Further, the analysis results reveal that all variables have a satisfactory i.e., above 0.70 level of internal consistency reliability. In this, the average variance extracted value is 0.72 for commitment, 0.65 for green performance, 0.88 for adaptability culture and 0.75 for innovation. Since all values are above 0.5 (Fornell and Larcker, 1981), the measures used in this study have a high level of convergent validity while discriminant validity has been assessed using Fornel-Lacker criterion. The average variance extracted (AVE) should be more than 0.50 (Chin, 2010). The table shows the square root of AVE of construct Adaptability culture, commitment, innovation and green performance is greater than the corresponding latent variables correlation. For example, The AVE of adaptability culture is 0.88 and its square root is 0.93. Therefore, 0.93 is greater than the correlation values in the column of adaptability culture and similar is the case with all other variables. Additionally, all heterotrait-monotrait ratio of correlations (HTMT) values were also less than 0.85 (Henseler et al., 2014), hence the establishment of discriminant validity based on

Table 1
Respondent details.

Age	Less than 25	25–35	35–45	More than 45
	42 (21%)	82 (42%)	62 (31%)	12 (6%)
Gender	**Male**	**Female**		
	132 (67%)	66 (33%)		
Education qualification	**High School**	**Graduation**	**Post-Graduation**	**PhD**
	21 (11%)	97 (49%)	71 (36%)	9 (4%)
Managerial Level	**Executives**	**Middle-Level Managers**		**Senior Level Managers**
	25 (12%)	111 (56%)		62 (32%)