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Factors Affecting Organizational Commitment Towards Waste Recycling in The Spinning Industry of Punjab, Pakistan

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Waste recycling has gained significant attention as a sustainable practice in industrial sectors, including Punjab's spinning industry. However, the level of organizational commitment to recycling varies due to multiple influencing factors. This study examines the key determinants of recycling commitment, focusing on leadership involvement, workforce engagement, financial constraints, and regulatory enforcement. The primary objective of this study is to assess the extent of organizational commitment to waste recycling and identify the factors that facilitate or hinder recycling initiatives in Punjab's spinning industry. A mixed-methods research approach was employed, combining quantitative survey data from industry professionals with qualitative insights from semi-structured interviews. Regression analysis and ANOVA tests were used to determine the impact of leadership commitment, workforce engagement, and financial constraints on recycling practices. The qualitative data were analyzed thematically to uncover deeper organizational perspectives. Quantitative analysis reveals a moderate level of organizational commitment to recycling, with leadership and workforce engagement emerging as strong predictors of recycling initiatives. Financial constraints negatively influence commitment, limiting the sustainability of recycling programs. ANOVA results show significant variations in commitment across job roles, with managers displaying higher engagement levels. Qualitative findings reinforce these results, highlighting inconsistent policy enforcement, motivational gaps among employees, and regulatory shortcomings. The study underscores the critical role of leadership, workforce participation, and supportive policies in fostering a strong recycling culture. Addressing financial constraints through incentives and policy enhancements can further improve sustainability efforts. Future research should explore tailored strategies to enhance recycling commitment across different industrial sectors.

1. Introduction

One of the most urgent issues of our days is the effective use of resources and sustainable development especially of the industries with major impacts on the environment. Spinning is one of the foundations of a textile industry in Pakistan, which plays a central role in the overall economy of Pakistan due to its significant contributions in terms of employment, export and general industrialization. Nevertheless, the aspects of current waste management are mostly characterized with waste inefficiencies, unsustainable disposal systems, and insufficient recycling systems in the industry. These challenges must be addressed to enable environmental sustainability, guarantee long-term industrial sustainability, and be consistent with the international trends in maintaining environmentally friendly operations (Hassan et al., 2022).

The textile business in the globe is infamous in its excessive resource use and waste pollution. It uses enormous amounts of raw materials like cotton, synthetic fibers, dyes and chemicals as well as large amounts of water and energy. Such practices are the causes of environmental problems such as the lack of water, pollution of chemicals, and soil erosion, and greenhouse gases. These impacts can be addressed by the application of recycling, which is an essential aspect of sustainable waste management (Kumar and Singh, 2020). It does this through less reliance on virgin resources, less pollution, less energy use and generation of economic value on the waste materials. Nevertheless, recycling activities in the spinning industry are not fully integrated and adopted because of a set of technical, organizational, and systemic obstacles (Ahmed & Waqar, 2021).

In Pakistan, spinning is a support for the overall textile value chain, where raw fibers are converted to yarn to be used in the further manufacturing processes (Zubair et al., 2023). The industry is very important to the livelihoods of millions of people and the export-based economy of the country. The spinning industry in Pakistan is associated with a lot of problems associated with waste management despite its importance. The poor recycling systems, low organizational commitment, poor technological infrastructure and lack of awareness on the economic and environmental advantage of recycling worsen depletion of resources and degradation of the environment. To achieve the aim of filling these gaps, it is necessary to implement a comprehensive and strategic way of boosting organizational commitment to sustainable waste management practices (Fatima & Shahid, 2019).

1.1 Waste Recycling and The Circular Economy

The concept of recycling as one of them represents the principles of a circular economy, where waste produced by a certain process serves as the resource of another. The approach focuses on the use of the so-called reduce, reuse, recycle (3R) strategy that is aimed at extending the product life cycle as well as optimization of resources and reduction of environmental damage. Recycling in spinning industry is the act of re-processing of waste products like yarn remnants, fabric scraps, synthetic fiber among others into finished products and thus makes the use of raw materials unnecessary and it also curbs the environmental degradation caused by the production

process. Nevertheless, recycling practices need to be implemented successfully overcoming various organizational, technical, and economic barriers (Mehmood et al., 2020).

Recycling efforts have proven to have vast environmental and economic value in the world, such as water and energy consumption, greenhouse gas emissions reduction, and preservation of raw materials. Recycling is also the alignment of industries to the increasing consumer and regulatory need of sustainable operations (Rasheed & Jamil, 2021). Nevertheless, the introduction of recycling in the spinning sector of Pakistan requires a thorough perception of what drives the commitment to the organization, such as the focus of its management, the involvement of its workers, the policies, the technological preparedness, and the financial incentives (Iqbal et al., 2023).

1.2 Challenges and Opportunities in Pakistan's Spinning Industry

In Punjab, the largest province of Pakistan and a textile center, the spinning business offers a good background to the discussion of these processes. The spinning mills in Punjab play a major role in the textile manufacture in the country with a major contribution to the manufacture of the yarn and a substantial number of workers. Nevertheless, these mills are subject to the systemic obstacles to the implementation of sustainable waste management practices (Aslam et al., 2021). The barriers to changing towards recycling include the organizational inertia, the lack of access to a modern recycling technology, and the insufficient enforcement of these regulations. Also, these are compounded by the fragmented nature of the spinning industry with different magnitudes of operations, some being small-scale mills and others being large industrial units. Smaller mills are also not financially and technically capable of investing in recycling infrastructure, and larger mills might be willing to sacrifice long-term sustainability to short-term economic benefits (Khalid and Rafiq, 2020). These systemic problems highlight the necessity of specific solutions to create the capacity, create awareness and develop the culture of sustainability in the industry.

Regardless of this fact, the spinning industry in Punjab has critical opportunities of improving its waste recycling. The sustainable practices are based on a solid industry base, a highly skilled workforce, and the availability of raw materials in the province. Moreover, growing need of environmentally friendly textile in the world market is some chance of the spinning industry of Pakistan to stand out in the global market. Through recycling, the industry will be able to cut costs, increase efficiency, and improve competitive advantage as well as weigh in on increased environmental and social objectives (Naeem et al., 2023).

1.3 Chindi - Emergence and Use

The Chindi durrie or rag rug in which waste cloth (chindi) is used as weft strands was originally made from scraps of old apparel, the warp being stout cotton thread, but the scraps have now changed. They come in bulk right out of the garment manufacturing units. Meaning of Chindi in Hindi—fragments of anything, to cut or break anything in pieces, like in local dialect 'Chindi Chindi Karna'. Another connotation of Chindi is cheap or patchy as in the term 'chindi chor' or petty thief. Chindi is a term used for fabric scraps (Verma & Bhardwaj, 2020). The art of traditional

weaving with leftover scraps of cotton strips in the weft is also called chindi. It involves converting used clothes into ropes and then makes various products out of it by using different techniques. Chindi is used instead of virgin material to make eco-friendly carpets, rugs, dhurries and floor coverings which are in great demand in US and Europe (Saxena et al., 2021).

Figure No 1: Chindi- Piles of Waste Fabrics

Chindi carpet and rugs are used interchangeably as the only difference is their size and their end use. Both are piled and can be knotted or tufted. Carpet or floor coverings are laid wall to wall and fixed on the floor whereas rugs are small in size and are placed on floor, tables, sofas and on the walls etc. Being a hub for second hand clothing and accessories Panipat has also emerged as the largest center for reprocessing second hand fabrics (Kumar & Sharma, 2020). The main purpose of recycling is to keep the textile within the economy once that garment has reached the end of its life, so that they can be productively used again and again and hence create further value. The last few decades have had the chindi durries becoming directly influenced by the interventions of designers. A newer range of recycled waste textile concepts in terms of sizes, colors, designs as well as forms have opened newer vistas in chindi durries in the export markets.

Figure No 2: Chindi Rugs

1.4 Handling Textile Waste

Gadkari and Burji (2015) have discussed four ways of handling textile waste. These can be enumerated as:

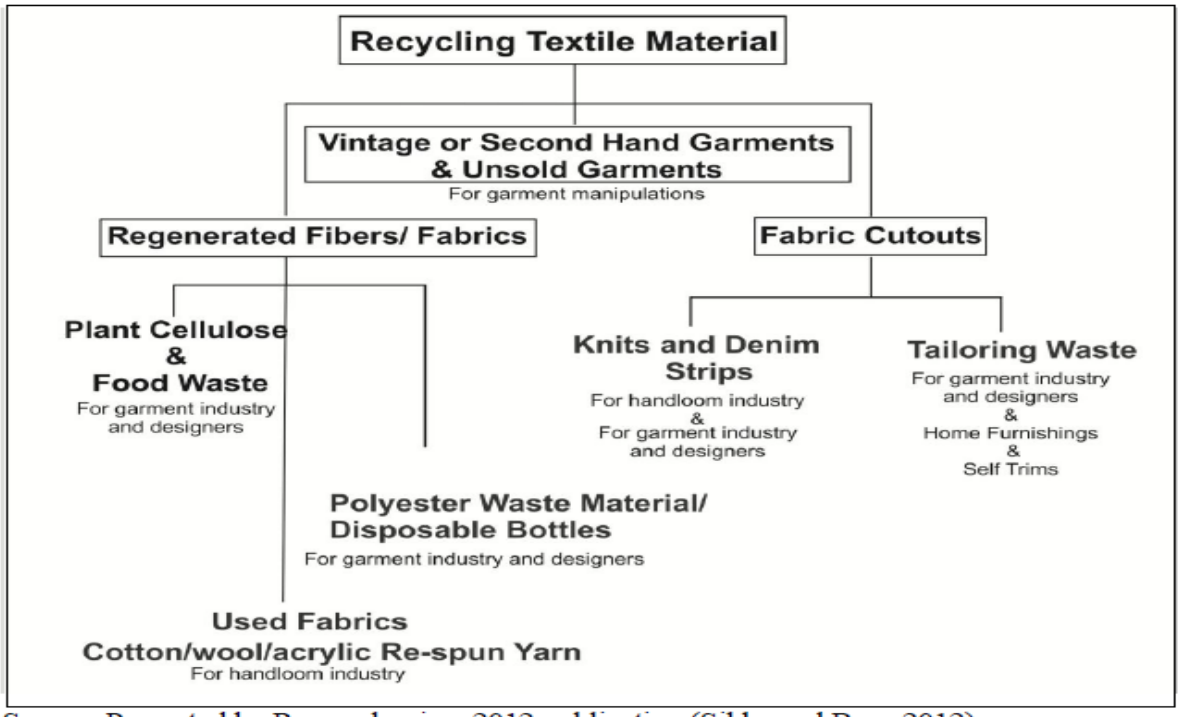
- Source reduction
- Incineration
- Landfills
- Recycling

Recycling of garments is done by sending clothes to second-hand markets and by creating innovative products (Gadkari & Burji, 2015). Further classification of converting garments into newer chindi products includes:

- Breaking down fabrics to fibers—shoddy materials obtained from knits
- Mungo is the fibre and fabric made from woven garments through cutting, shredding, and carding, alongside other mechanical processes
- Re-design of used clothing

They concluded that the fabric and apparel recycling industry is continuously striving to obtain "new viable value-added products" made from textile waste or chindi. Recycling can be mechanical, chemical, or physical. Source reduction, another method, involves reducing waste generation at the origin. Most collected clothing is sorted and graded by highly skilled workers (Joshi & Kaur, 2017). Once sorted, these item lots are dispatched to various destinations.

Figure No 3: Different Stages of Second-Hand Garments & Textile Waste



Source: Presented by Researcher in a 2012 publication (Sikka and Brar, 2012)

The designers of the value-added products have to search for available chindi raw material in gloomy precincts of shoddy or scrap dealers. The material is mostly stuffed into gunny bags and the search for similar material again is a Herculean task (Khan & Patel, 2021). They cannot commit to making copies of the design because of inconsistency of raw material availability. There is a marked lack of sorting of chindi on basis of color, texture, quality of fibre etc. it is just not being done. In case this is done there could be a more focused market for the raw material to fabricate specific products. Engaging the consumer in understanding the impact of carbon emission on the planet would enhance the appeal of regenerated and manipulated garments and also improve business of eco-friendly lifestyle products.

Factors affecting organizational commitment towards waste recycling in the spinning industry of Punjab, Pakistan, are multifaceted and interlinked with both pre-consumer and post-consumer textile waste management practices (Rashid et al., 2023).

1.5 Pre-Consumer Textile Waste

Re-consumer textile waste, including cotton waste, plays a crucial role in manufacturing various products such as surgical bandages, pads, and gauze. This waste is also utilized in nonwoven industries for purposes like mushroom cultivation and producing recycled bandages (Ahmed & Khan, 2020). A significant portion of this cotton waste is cleaned and processed to meet specific standards and is then exported to international markets (Iqbal et al., 2022).

1.6 Recycling of Post-Consumer Textile Waste

Another critical factor that affects the organizational commitment towards the recycling practices is post-consumer textile waste. This kind of waste, which entails wool and acrylic substances are widely recycled not only within the industrial sector but also in residential areas. As an example, the town of Panipat in North India is considered the largest textile recycling centre in the world. The town engages in the manufacturing of blankets and other goods that use the so-called shabbies or wasted wool yarn that is obtained in the second-hand clothing markets in the developed nations, including the USA and UK. This small-scale industrial enterprise is very lucrative economically with annual turnover of PKR 1700-3000 crore in Panipat alone mostly through affordability of recycled woolen blankets (Sharma & Verma, 2020). The association of All-India Woolen and Shoddy Mills has reported that trade in recycled materials is not a scam, the mutilation of clothes prior to passing the Indian border is done to comply with the rules.

The organizational commitment to recycling is interesting to study the practices of sorting, grading, and processing imported fabric waste in Pakistan. As an illustration, the Kishco Group of Faisalabad undertakes the importation and exportation of recycled clothing materials actively to serve a variety of industries (Nath, 2021). The waste in the imported textile is the residues of acrylic, cotton, nylon, wool and polyester, which have been produced at different stages of manufacturing such as the manufacturing of fibres, spinning of yarns, manufacturing of woven goods, manufacture of knitted goods and also manufacturing of garments. A well-organized system helps to convert this waste into fibers regenerated (like poly- regenerated fibers), under it

(Khan et al., 2023). Wool, cotton sweaters, and acrylics that are used as a part of used clothing are reprocessed into regenerated fibers to provide different areas. The sorting and grading of imported textile consumer waste is, according to industry leaders like Nohar Nath of the Kishco Group, done at the Kandla Special Economic Zone at Gujarat. It is also considered to be one of the biggest destinations of the sorting and grading of textile waste in Pakistan. A portion of waste generated in the processing of the textile is turned into industrial wiping materials and is sold back to the country of origin of the waste such as the USA and Europe. This pattern of trade shows the opportunities to embrace the same approach in the spinning business in Punjab, with the need to develop technology, train the workforce, and the policy to improve recycling measures and contribution of organizational dedication towards sustainability within the state (Hussain & Qureshi, 2024).

1.8 Significance of The Study

This research is very crucial to different stakeholders involved in the industry, policymakers, environmentalists, and researchers. The results of this study can cause a significant shift in the spinning sector of Punjab by resolving the burning problem of waste reuse and creating the culture of sustainability. Industrially, the integration of good practice in recycling waste can result in several gains to the spinning industry. Recycling saves the reliance on virgin raw materials, e.g. cotton, synthetic fibers that are getting scarce and costly. Spinning mills would be able to save money by recycling waste products into useful products, which would boost their resource efficiency, and their overall performance. In addition, competitive practices in waste management can increase the competitiveness of the industry in the global markets where consumers and buyers are increasingly requesting environmental practices.

This study is rich in information that can be used by policymakers to understand factors which affect the organizational commitment in recycling in the spinning industry. The study provides the basis to formulate specific policies and regulations to ensure that recycling is adopted by targeting the hindrances and facilitators. These policies may contain economic benefits, like tax exemptions or subsidies of recycling programs, and more serious environmental policies which require reduction of waste and recycling of waste. Also, the results can be used to design educational and awareness activities to ensure that the culture of recycling is promoted in the industry and beyond. The importance of the study on the environment aspect is that it could completely reduce the adverse effects of the spinning industry on the natural ecosystems. The environmentally friendly effect of waste recycling is a decrease in the environmental footprint of the industry because of the reduction in resources use, minimization of pollution and greenhouse gas emissions. The promotion of the principles of a circular economy makes the study a part of the general aims to reach the goals of sustainable development, in particular, the goals regarding responsible consumption and production, climate action, and protection of natural resources. This research can also be useful to the academic community since it will bridge a major gap in the literature regarding waste recycling in the spinning industry in Pakistan. The fact that the study concentrates on organizational commitment makes it a unique contribution to the existing research

on factors that contribute to recycling adoption, as it is mostly based on a social and cultural perspective. Future research on sustainability practices within other sectors of the textile value chain or industries with similar issues can be based on the findings.

In addition, the implications of this research are more widespread in the society. The spinning industry can help in conserving the environment and promoting the health of the people by ensuring that the majority of its waste is managed in a manner that does not harm the environment. Less pollution and resources saving are beneficial both to the industry and local populations and to future generations. The research provides a strong emphasis on the interrelationship between economic, environmental, and social aspects of sustainability and on the necessity of the concerted actions of stakeholders to help them face common problems.

1.9 Research Objectives

The following are the specific objectives:

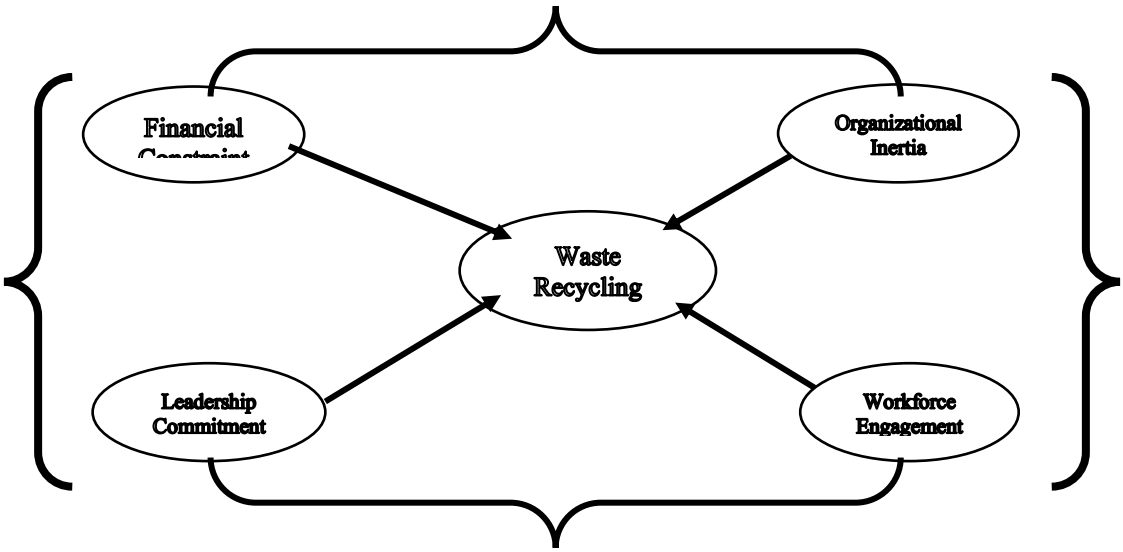
1. **Examine Obstacles to Recycling Adoption:** Determine and assess the barriers that prevent the adoption of waste recycling in the spinning industry including organisational inertia, technical constraints, financial constraints and systemic inefficiencies.
2. **Research Facilitators of Recycling Activities:** Research the impact of leadership commitment, employee engagement, corporate culture and technological development in influencing the realization of recycling activities.
3. **Evaluate Policy/Market Impact:** Determine the impact of the government regulation, environmental policies, economic incentives, and market condition on organization behavior and waste recycling attitudes.
4. **Develop Strategic Recommendations:** Suggest evidence-based practical solutions to improve organizational commitment and help in facilitating the adoption of sustainable waste management practices among the spinning industry players.

1.10 Research Questions

The proposed research is supported by a main research question and a number of sub-questions that will help to answer the main challenges and opportunities of waste recycling in the Punjabi spinning industry:

1. Which are the dominant considerations of organizational commitment to waste recycling within the spinning industry of Punjab?
2. What are the main obstacles that prevent the application of recycling in the spinning industry?
3. What is the relationship between leadership, workforce engagement and corporate culture and organizational attitudes to recycling?
4. Which part is played by the government policies, environmental regulations, and economic incentives in influencing the waste recycling initiatives?

Figure No 4: Hypothesized Research Model



2. Literature Review

The study of scholarly works on a subject is an essential window to understanding the processes and mechanism of a particular idea. The present research is a pioneering effort in this area of study and therefore it was quite a task to stitch together the relevant components. The review of available literature traces the origins of „Chindi" in the world and in Pakistan. The reuse and recycling of clothing articles was a matter of thrift in the pre-industrialized society. However, it has become a vital necessity in the present times because of the severely detrimental impact on the environment.

2.1 Theoretical Framework

This study examines the issue of factors that affect organizational commitment to waste recycling in the spinning industry of Punjab. The theoretical framework incorporates various views such organizational behavior, sustainability management and institutional theory to elaborate the relationship between financial limits, leadership commitment, workforce engagement, and policy impacts. The theories are a basis used in explaining the impacts of organizational dynamics on waste recycling practice.

2.1.1 Theories Supporting the Study

The Theory of Planned Behavior holds that attitude, subjective norm, and perceived behavioral control all determine the behavior. Regarding waste recycling, the adoption of sustainable practices by organizations is more probable by the positive perceptions of the benefits of recycling, whereas industry standards, peer influence, and regulatory expectations have the immense influence on the commitment of the organization. Also, the organization is capable of

recycling waste based on the availability of resources, financial capacity, and technological infrastructure (Hussain & Farooq, 2022).

According to the Resource-Based View, organizations possessing distinctive resources including financial, human and technological capital have the benefit of attaining a competitive advantage. Companies that are financially more flexible will be able to invest in recycling machines and methods, legislative involvement in the employment of skilled workers increases efficiency in the operations, and the technological innovation will allow managing waste effectively and cheaply (Ahmad et al., 2021).

The Institutional Theory is used to explain the influence of outside forces in the behavior of the organization. The government pressures on firms through coercion regulations and environmental laws push the firms to use recycling practices, and normative pressures on the firms through industry associations and professional networks pressurize the firms to use sustainable waste management. Moreover, mimetic pressures compel companies to copy the achievements of the successful companies that have undertaken recycling programs to improve reputation and position in the market (Khan & Malik 2023).

2.2 Organizational Commitment and Sustainability in The Spinning Industry: A Technical Perspective

Organizational commitment is an essential factor in operational success of businesses in different fields. It is a manifestation of a psychological attachment that the employees have to their organization and this attachment determines their motivation, their interest, and contribution in general to the attainment of organizational goals. Sustainability in organizational structures has never been more urgent than today in an era where environmental sustainability is a burning issue in the world. This holds special importance in those industries that have a high impact on the environment, like spinning that is one of the key components of textile in the country of Pakistan (Khan and Malik, 2022). Implementation of sustainable practices (such as recycling) is not only necessary to reduce the environmental damage but it also is mandatory to facilitate the operational efficiency and to correspond to the international standards of sustainability. This is a complex discussion of the connection between sustainability and organizational commitment with reference to the spinning industry. It explores theoretical foundation of recycling in the context of the circular economy, the use of the 3R (Reduce, Reuse, Recycle) strategy and international good practices. Moreover, it also studies the aspects of organizational commitment and how they might fuel sustainability programs, specifically recycling, in the spinning sector (Rashid et al., 2023).

2.3 Recycling and The Circular Economy: A Conceptual Framework

Recycling can be seen as a part of the circular economy which is the new model aimed at solving the inefficiencies of the old linear economic framework which is based on the take-make-dispose type of approach. The circular economy does not consider waste as a final good but rather as a resource, which can be sent back into the production processes. This model focuses on three fundamental principles, namely, the design out waste and pollution, product and materials in use,

and regeneration of natural systems (Ellen MacArthur Foundation, 2019). Recycling is rather consistent with such principles as it prolongs the life cycle of materials and decreases the use of virgin resources. The recycling process of spinning industry is usually reprocessing of the yarn remnants, fabric scraps and synthetic fibers into raw materials that can be reused (Ali et al., 2021). This practice helps to minimize waste as well as to optimize resources, save costs, and be a steward of the environment (Javed & Nasir, 2023).

2.4 Global Practices in Textile Recycling

The textile industry has a wide range of recycling practices in different regions in accordance to the differences in the technological capacity, the policy systems and consumers. Advanced economies, including the European Union (EU), the United States and Japan, have been on the frontline in developing new recycling systems that are backed with a strong regulatory framework. Waste prevention, reuse and recycling should be a priority in member states in the EU through the Waste Framework Directive. It has resulted in the development of advanced recycling facilities and the implementation of the extended producer responsibility (EPR) system, in which producers bear the responsibility of maintaining the end-of-life of their products (European Commission, 2020).

Conversely, the developing economies have a lot of problems when it comes to putting in place effective recycling systems. On one hand, the lack of access to high-tech recycling technologies, economic factors, and lack of knowledge about sustainable practice are usually impediments. As an example, the informal recycling industry prevails in such nations as Pakistan and Bangladesh, and manually sorted and processed methods are ineffective and dangerous. To overcome these challenges, there should be special measures, such as capacity building, infrastructure investment, and context-specific solutions to these territories according to the socio-economic realities of these regions (Ahmed & Rahman, 2021).

2.5 Organizational Commitment to Sustainability

The effectiveness of the 3R approach to the textile industry depends on the organizational desire to be sustainable. Organizational commitment is a multidimensional concept that is made up of affective, continuance, and normative attributes, which are vital in influencing sustainable practices. Affective commitment shows commitment of employees based on their emotional attachment to the sustainability goals of the company. Employees tend to promote and engage in programmes like recycling programs, resource saving and production of environmentally-friendly products when they strongly identify themselves with these goals (Smith & Lee, 2021). As an example, the training courses that will underline the positive effects of the 3R strategy on the environment can result in improved emotional involvement of employees and development of innovative and responsible culture. The continuance commitment occurs due to the perception of the employees on the economic and operational value of sustainable practices. Emphasizing the benefits in terms of costs and efficiency generated by the use of waste reduction and recycling can encourage employees to take part in such programs (Khan and Malik, 2022). To illustrate the point, employees can be convinced of the need to embrace sustainable practices by showing them the

financial benefits of using recycled fibers over the virgin materials. The normative commitment is motivated by the moral obligation. When workers consider sustainability as an ethical responsibility, they will be more inclined to support environmental initiatives, despite having no direct financial incentives (Rashid et al., 2023). This aspect is more applicable in the textile sector where the effects on the environment are high. Organizations are able to develop a highly committed workforce by developing a sense of accountability and moral responsibility towards the other members of society.

2.6 Organizational Commitment

Organization commitment is a complex construct that indicates the psychological attachment/loyalty of an employee to an organization. It also includes emotional attachment, perceived obligation and cost-based decisions to stay, which constitute affective, normative and continuance components, respectively (Smith & Lee, 2021). Organizational commitment is mostly linked to high job satisfaction, low turnover intentions, high productivity and organizational goal orientation (Hermawati et al., 2022). The construct can be used as a crucial indicator of stability in the workforce and how much the employees are motivated to make the organization achieve its success and stay in the company.

2.7 Financial Constraints

Financial Constraints are the financial constraints in which an organization has a limitation of funds that it will use in allocating it to its operations, development of its personnel and growth (Li et al., 2023). These limitations can be occasioned by reduction in the budget, inability to generate enough revenue, or external economic forces (Ehiaguina et al., 2024). The financial constraints when in existence have an adverse effect on the organizational dynamics by restricting the motivational levels of the employees, delaying the technological changes, reducing the staff numbers and cutting the investment on training and development programmes (Zhai et al., 2022). This could result in a lack of satisfaction and a weak commitment of the employees as financial insecurity tends to destroy the organizational trust and stability in the long run (Aliyev, 2022).

2.8 Leadership Commitment

Leadership commitment refers to the extent to which the organizational leaders maintain commitment, accountability and congruency with their mission, values and organizational objectives (Yasin et al., 2023). The commitment can be demonstrated in a number of ways such as open decision making, vision of the strategy, encouraging employee growth and safe governance (Benkarim & Imbeau, 2021). Devoted leadership builds a culture of trust, inspiration and performance, which is central to shaping employee attitudes, such as morale, engagement, and loyalty (Zanabazar et al., 2023). It also involves leadership commitment which plays a crucial role in steering change management and innovation, organizational resilience and flexibility in changing environments.

2.9 Workforce Engagement

Workforce Engagement can be close to the engagement feelings and thoughts of employees on their jobs, and it is expressed by passion, engulfment, and active engagement in the work processes of the organization (Toth et al., 2021). Active employees will generally be more productive, less absentee, and more innovative and satisfied with customers (Voordt & Jensen, 2023). The construct includes job satisfaction, role clarity, autonomy, recognition and feedback mechanisms (Manolache & Epuran, 2023). Engagement of workforce has become one of the determinants of organizational success because it does not only affect the performance of an individual but also the overall organizational performance (Yadav et al., 2022).

2.10 Policy Influences

Policy Influences are the effects of official rules, regulations, procedures and strategic directions on organizational behavior and perception of employees (Manolache & Epuran, 2023). Such might be organizational policies of ethics, safety, diversity, performance management, and governmental or industry compliance. Good policy systems facilitate accountability, fairness, and transparency thus enhancing organizational structure and trusts among employees (Efunniyi et al., 2024). On the other hand, ambiguous or ill-communicated or inconsistently applied policies may result in misunderstanding, loss of morale, and opposition to change (Deng et al., 2024). The policy influences are fundamental in determining the culture of an organization and also contributing to the process of strategic alignment (Akpa et al., 2021).

2.11 Significant relation Between Leadership Commitment and Organizational Commitment

Although Leadership Commitment and Organizational Commitment are related, they are two different constructs that are at different levels in organizational structure (Park et al., 2022). Leadership Dedication refers to the engagement and person-active participation in leadership (Bennett & Hays, 2023). It is a demonstration of how the leaders focus on organization objectives, nurture their teams and reflect their organizational values in their actions and decisions (Jerab & Mabrouk, 2023). Organizational Commitment, on the other hand, can be considered as the emotional and psychological attachment that workers, irrespective of their level of hierarchy, will have to the organization, on the whole (Triguero-Sánchez et al., 2021). It is a bottom-up approach that is influenced by how the employees perceive leadership, organizational culture, growth prospects and organizational stability (Jerab & Mabrouk, 2023). Basically, leadership commitment has an impact on the organizational climate, whereas the organizational commitment is an indicator of how the employees react to the climate (Kawiana et al., 2021).

2.12 Hypotheses Development

In view of the research objectives and the knowledge gained in the literature review, the hypotheses of the current research are the following and are tested to explore the variables that impact organizational commitment to waste recycling in the spinning industry in Punjab.

H1: Financial constraints have a significant negative impact on organizational commitment toward waste recycling in the spinning industry.
H2: Organizational inertia serves as a significant barrier to the adoption of recycling practices.
H3: Leadership commitment positively influences organizational attitudes and behaviors toward recycling initiatives.
H4: **Workforce engagement plays a critical role in facilitating waste recycling practices.**

3. Material & Method

3.1 Study Design

The research design used in this study is mixed approach which acquires both quantitative and qualitative research to guarantee complete explanation of the factors which affect organizational commitment to waste recycling in the spinning industry in Punjab. The mixed-methods approach allows collecting the rich and diverse information that is able to reflect the complexity of organizational behaviors, challenges, and opportunities. The quantitative component enables measuring the relationships between variables with the help of the statistical tools, whereas the qualitative component gives more insights into the contextual and experience-based elements of the waste recycling projects.

The design of the study is descriptive and explanatory. The descriptive component will be attempting to describe the existing situation of recycling practices in the spinning industry whereas the explanatory component will attempt to reveal causal relationship between organizational commitment and the influences included in the leadership, employee engagement and policy influences.

3.2 Study Population and Sampling

3.2.1 Target Population

This study target includes employees of the different positions in spinning mills in Punjab, Pakistan. These are the managerial positions, operational supervisors, the technical positions, and general workers. The groups have their own views to bring to the study:

- **Managers and Owners:** This category being among the major decision-makers is important in the determination of the policies and distribution of resources to be used in waste recycling programs.
- **Supervisors and Technicians:** These are persons who are directly involved in the application of the recycling processes as well as ensuring that they follow organizational policies.
- **General Workers:** This group will offer details on the real world issues and opportunities related to the daily waste management practice.

3.2.2 Sampling Technique

In order to achieve a representative sample, a stratified random sampling method is used in the study. The layers are founded on the work positions in the organization and geographic

location, including north, central, and south parts of Punjab. The stratification is used to make sure that the sampling represents the various organizational and regional processes in the industry. The sample size is estimated to be 200 participants, which was calculated using Cochran formula, to guarantee that the results will be statistically significant and can be generalized. This is a proportionate sample size for the strata to balance.

3.3 Data Collection Methods

3.3.1 Primary Data Collection

Structured Questionnaire: A structured questionnaire is used as a major instrument of collection of quantitative data. The questionnaire will consist of questions that relate to major constructs that were identified in the literature; Socio demographic information and key question that relate to study Construct which are; Recycling equipment Cost, Recycling method and Waste management. Each section consists of the items that were measured with the 5-point Likert scale of Strongly Disagree to Strongly Agree. This format makes it easy to respond and it is easy to analyze the attitudes and perceptions statistically**.**

The questionnaire is constructed on the basis of the validated scale adjusted on the context of spinning industry in Punjab. The instrument is valid and reliable since a pilot study involving a sample of 20 participants has been conducted. The pilot study will be used to make refinements on the questionnaire that will be ambiguous and make the questionnaire clearer. Table 4 below gives the (Cronbach's Alpha of the questionnaire based on the responses of 20 respondents. Cronbach Alpha is a measure of internal consistency (reliability) of the questionnaire, which would guarantee that the questions in the particular section relate well to the others Overall Questionnaire: (0.701)

Qualitative Data: Qualitative data is gathered in form of semi-structured interviews and focus group discussions. The semi-structured interviews will involve 15-20 key stakeholders such as managers, supervisors and policymakers to get in-depth understanding of the challenges and facilitators of waste recycling. The interview guide is created in such a way that it will address such themes as commitment to leadership, employee engagement, and regulatory influences.

Also, two, 8-10 focus group discussions are held. These discussions allow sharing the practices of recycling and discovering mutual views on obstacles and opportunities. Interview and focus group sessions are audio-taped with the agreement of participants and transcribed to analyze.

3.3.2 Secondary Data Collection

Secondary data supplement the primary data on the basis of providing context background and benchmarking information. The sources are government reports about environmental policies, industry publications, case-studies about effective recycling programs and academic literature on sustainability practices. These data are the basis of considering the larger policy and market forces of the spinning industry.

3.4 Scale and Measurements

Financial Constraints is measured with the help of 5 items **(**Ramayah et al., 2012**).** Leadership Commitment is measured with the help of 6 items **(**Daily & Huang, 2001). Organizational Inertia Constraints is measured with the help of 6 items (Zhu & Sarkis, 2004). Workforce Engagement is measured with the help of 6 items **(** Self-developed based on literature review; Cronbach's α = 0.85**).** Waste Recycling Organizational Inertia Constraints is measured with the help of 6 items (Testa et al., 2016). All scales are estimated with the help of 5 point Likert type scale ranging from Strongly Disagree to Strongly Agree.

4. Results and Analysis

The chapter provides the results of the research relying on the data of the spinning industry in Punjab, Pakistan. The findings are classified into two major parts including quantitative and qualitative analyses. Quantitative findings are in form of descriptive statistics, correlation analysis, regression analysis and ANOVA, whereas qualitative findings will be obtained through thematic analysis of interviews and focus group discussion.

4.1 Quantitative Results

4.1.1 Demographic Information

The research population included 200 respondents who were representatives of different positions in spinning industry such as managers, supervisors, technical personnel and general employees. The demographic breakdown is given in table 1.

Table No 1: Demographic Characteristics of Respondents

Characteristic	Frequency	Percentage (%)
Gender		
Male	160	80.25
Female	40	19.75
Age Group		
20-30 years	65	32.50
31-40 years	80	40.00
41-50 years	40	20.00
Above 50 years	15	7.50
Job Role		
Manager	50	25.00
Supervisor	60	30.00
Technical Staff	45	22.50
General Workers	45	22.50
Education Level		

Characteristic	Frequency	Percentage (%)
Secondary	30	15.00
Diploma	50	25.00
Bachelor's	85	42.50
Master's & Above	35	17.50

Table No 2: Descriptive Statistics

Variable	Mean	Std. Deviation	Minimum	Maximum
Organizational Commitment	3.78	0.82	1.90	5.00
Financial Constraints	3.21	0.94	1.50	4.80
Leadership Commitment	4.02	0.75	2.30	5.00
Workforce Engagement	3.89	0.79	2.10	5.00
Policy Influences	3.45	0.87	2.00	4.90

These findings demonstrate that the organizational dedication to the waste recycling process is average (Mean = 3.78), whereas the financial restrictions are also still rather significant (Mean = 3.21). The responses to the leadership commitment and workforce engagement are relatively strong (Mean = 4.02 and 3.89, respectively).

4.1.2 Correlation Analysis

The correlation analysis by Pearson was carried out to study the relationships between the most important variables (Table 3).

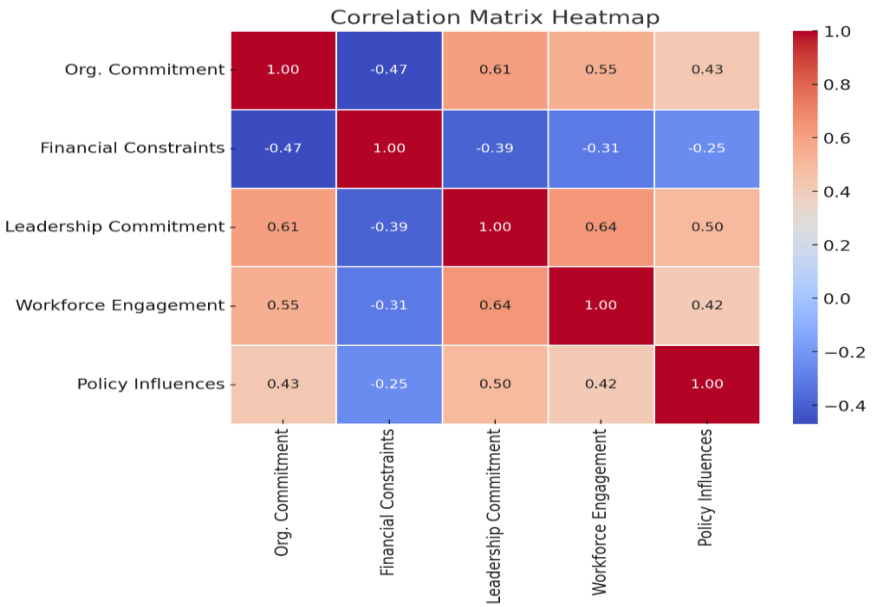
Variable	Org. Commitment	Financial Constraints	Leadership Commitment	Workforce Engagement	Policy Influences
Organizational Commitment	1.00	-0.47	0.61	0.55	0.43
Financial Constraints	-0.47	1.00	-0.39	-0.31	-0.25
Leadership Commitment	0.61	-0.39	1.00	0.64	0.50
Workforce Engagement	0.55	-0.31	0.64	1.00	0.42
Policy Influences	0.43	-0.25	0.50	0.42	1.00

Significance levels: $p < 0.05$, $p < 0.01$

The table shows the correlation coefficient of five major variables, which are Organizational commitment, financial constraints, Leadership commitment, Workforce engagement and Policy influences. Every value shows the strength and direction of the linear correlation between two variables, and asterisk indicates the level of statistical significance ($p < 0.05$, $p < 0.01$). The positive correlation between Organizational Commitment and Leadership commitment is strong ($r = 0.61$, $p < 0.01$), and it means that the higher the leadership commitment is, the higher the organizational commitment. Equally, there are moderate positive relationships with Workforce Engagement ($r = 0.55$, $p < 0.01$) and Policy Influences ($r = 0.43$, $p < 0.01$), which imply that organizational commitment is promoted by engaged employees and favorable policies. On the other hand, the Organizational Commitment and Financial Constraints have moderate negative correlation ($r = -0.47$, $p < 0.01$) which means that the lower the financial constraints, the lower the organizational commitment is. All other variables, such as Leadership Commitment ($r = -0.39$, $p < 0.01$), Workforce Engagement ($r = -0.31$, $p < 0.01$), and Policy Influences ($r = -0.25$, $p < 0.05$) have negative relationships with Financial Constraints. This implies that financial constraints can erode the support of leadership and staff participation and the efficiency of policies. Workforce Engagement is positively and significantly linked to Leadership commitment ($r = 0.64$, $p < 0.01$) and Policy Influences ($r = 0.50$, $p < 0.01$) is positively and significantly associated with Leadership commitment, which means that committed leadership results in engaged workforces and implementing policies. In its turn, Workforce Engagement is also positively related to Policy Influences ($r = 0.42$, $p < 0.01$), which supports the idea that policies contribute to the motivation and engagement of employees.

4.1.3 Regression Analysis

Figure No 5: Regression Matrix



A multiple regression analysis was conducted to reveal the effect that the independent variables had on the level of organizational commitment (Table 4).

Table No 4: Regression Analysis

Predictor	Beta (β)	t-value	Sig. (p)
Financial Constraints	-0.38	-5.21	0.020
Leadership Commitment	0.47	7.89	0.000
Workforce Engagement	0.35	6.23	0.000
Policy Influences	0.22	3.76	0.001
R-squared (Π^2)	0.61		
Adjusted R-squared	0.59		

The findings of the multiple regression analysis present significant findings to the factors affecting organizational commitment. Leadership Commitment stands out as the most powerful predictor with a positive and statistically significant value ($b = 0.47$, $t = 7.89$, $p < 0.001$), meaning that an effective leadership commitment has an enormous effect on the commitment employees have to the organization. Another positive change is also significant, namely the Workforce Engagement ($b = 0.35$, $t = 6.23$, $p < 0.001$), which implies that the greater the level of employee engagement and enthusiasm, the more loyalty and alignment within the organization. Moreover, there are positive correlations between the Policy Influences and organizational commitment ($b = 0.22$, $t = 3.76$, $p = 0.001$) and positive implications of this fact are that clear, supportive and effective policies play a significant role in an organization in developing commitment in the staff. Financial Constraints on the other hand portrays the opposite scenario; they have a negative negative and statistically insignificant correlation ($b = -0.38$, $t = -5.21$, $p = 0.020$), which means that when organisations are constrained by the economy or budget they lose employee commitment. The total model shows a high percentage of the variance in the commitment in an organization with the R-squared of 0.61 that is, 61 percent of the variance of the commitment level is explained by the four predictors. The value of Adjusted R-squared (0.59) also verifies the strength of the model because it shows a good fit even when it is varied with regards to the number of variables incorporated in it. The overall results of this work summarized these factors as critical to organizational commitment through leadership, engagement, a positive policy environment, and financial health.

4.1.4 ANOVA Analysis

ANOVA results indicate significant differences in organizational commitment based on organizational roles. Managers showed the highest commitment (Mean = 4.12), while general workers reported lower commitment (Mean = 3.41).

Table No 5: ANOVA Results

Factor	F-value	Sig. (p)
Organizational Role	4.87	0.003
Geographic Region	3.65	0.010

The results of ANOVA show that the different organizational roles have statistically significant differences in the organizational commitment as shown by an F-value of 4.87 and p-value of 0.003. This implies that the degree of commitment of the employees has a meaning based on the position of the employees in the organization. In particular, the organization commitment was highest among managers and the mean score was 4.12 indicating a greater sense of organizational alignment and loyalty. Conversely, general workers were found to have the low mean score of organizational commitment at 3.41, which showed that they have relative lack of organizational attachment or involvement. More so, the analysis shows that geographic region has a substantial impact on organizational commitment ($F = 3.65$, $p = 0.010$), implying that the level of commitment is also different in various regions. This might be a result of the regional cultural, economic or organizational aspects that influence employee attitudes and experiences. In general, the results indicate that when assessing and enhancing organizational commitment, one has to pay attention to both positional and geographical factors.

4.2 Qualitative Analysis

The interview took the form of a structured interview involving 20 important stakeholders such as managers, supervisors and policymakers to understand their perception about waste recycling in the spinning industry.

Figure No 6: Summary of Qualitative results

Table No 6: Summary of Structured Interview

Questions	Responses
What policies does your organization have regarding waste recycling?	70% of respondents stated that their organizations have formal policies, but enforcement is inconsistent.
How does your organization ensure compliance with recycling policies?	50% reported regular monitoring, 30% mentioned occasional checks, and 20% stated there was no structured monitoring
How committed is top management to promoting recycling initiatives?	60% agreed that management supports recycling, while 40% believed commitment was limited to verbal support.
Are employees encouraged to participate in recycling initiatives?	55% stated that employee participation is encouraged, while 45% felt engagement was minimal.
What challenges do you face in ensuring organizational commitment to recycling?	Lack of resources (40%), lack of employee motivation (35%), and inadequate policy implementation (25%) were the main challenges.
How does recycling contribute to your organization's overall goals?	65% linked recycling efforts to cost savings and environmental responsibility.
What financial limitations impact recycling practices?	50% cited budget constraints as a major barrier.
How does leadership influence recycling efforts?	70% emphasized the role of leadership commitment.
Are government regulations effective in promoting recycling?	45% believed regulations need stricter enforcement.
What improvements do you suggest for enhancing recycling initiatives?	Increased training and better incentives were key suggestions.

4.3 Discussion

The research has also found organizational inertia and financial constraints as other major constraints to the implementation of waste recycling practices in the spinning industry. In quantitative results, organizational commitment was significantly negatively affected by financial constraints ($b = 0.38$, $p < 0.05$), which supports the results of the prior research (Tariq et al., 2023; Ullah et al., 2022). High costs of recycling equipment and lack of budgets were common reasons of financial constraints mentioned in qualitative interviews with half of the respondents citing budget constraint as a significant problem. This will be in line with the Resource-Based View, which states that organizations that have limited financial means find it hard to invest in long term practices. Resistance to change and the lack of innovativeness is another crucial barrier, which was also found to be an organizational inertia. Qualitative data also brought out that low recycling adoption was caused by employee resistance and a lack of motivation according to 35 percent of the respondents. This result aligns with the Theory of Planned Behavior (Hussain & Farooq, 2022), according to which negative attitudes and the lack of perceived behavioral control are barriers to behavioral change. The importance of organizational culture as a barrier to sustainability efforts has also been highlighted by other researchers in the same field (Hameed et al., 2020; Ullah et al., 2022). The results of the study highlight the existence of financial and cultural barriers that require specific interventions. As an example, financial incentives, including subsidies or tax credits, might ease budget limitations, and change management plans might be used to overcome organizational inertia. The research paper has classified financial constraints as a major hindrance to the implementation of waste recycling measures. Quantitative scores showed that financial constraints have a strong negative effect on organization commitment ($b = [?]0.38$, $p < 0.05$), which is consistent with the previous results (Tariq et al., 2023). Qualitative responses indicated that 50 percent of the respondents indicated that the main issue was financial constraints where they have to invest a lot of capital in recycling facilities. These results fit the Resource-Based View (Ahmad et al., 2021) that claims that companies with limited financial assets find it difficult to invest in sustainability processes.

Similar findings have been proposed in the previous literature on the financial constraints as an impediment to environmental management practice (Hameed et al., 2020; Tariq et al., 2023). In the textile and spinning industry, economic competition is known to make companies believe that short-term profits are more important than long-term survival (Ali et al., 2021; Khan and Malik, 2022). These challenges are all of importance and strategic financial interventions like subsidies, tax relief, and public-private partnerships would be essential in limiting these challenges considering that the financial burden would be substantial (Hussain and Farooq, 2022). Moreover, the availability of funding systems and green investment opportunities is still poor in the less developed economies, which contributes to the problem of financial limitations (Tariq et al., 2023). Ensuring that they have a more formal financial structure, such as low-interest loans or government-sponsored grants, would equip firms with the resources to implement recycling infrastructure successfully (Ullah et al., 2022).

Workforce engagement and leadership commitment were found to be some of the major facilitators of recycling initiatives. Quantitative analysis showed that there was a strong positive correlation between leadership commitment and organization commitment ($b = 0.47$, $p < 0.01$), which was similar to the results of Ullah et al. (2022). The level of leadership also played a significant role as seen in qualitative data where 70 percent of the participants pointed out the importance of top management support in spearheading recycling. This corresponds to Institutional Theory that implies that leadership is a substantial aspect that influences organizational norms and behaviors development (Khan and Malik, 2022). The engagement of the workforce also became one of the important variables, where the correlation between it and organizational commitment was found to be significant and positive ($b = 0.35$, $p < 0.01$). The qualitative interviews found out that 55 percent of the respondents felt that employee participation was promoted, but 45 percent said that participation was low. This observation is in line with the findings by Hameed et al. (2020), Ullah et al. (2022), who assert that employee participation in sustainability programs is vital. The research recommends the promotion of engagement culture by training, incentives and involvement in decisions making as a way of promoting recycling. Organizational inertia that was observed to be another major barrier of this study presented itself through resistance to change and poor innovation. Qualitative results revealed that employee unresponsiveness and insufficient motivation were identified as the reasons why some people did not engage in recycling. Such behavior can be explained by the Theory of Planned Behavior (Tariq et al., 2023), which assumes that negative attitudes and the lack of perceived behavioral control are the factors that hamper behavioral change. Past studies have indicated how corporate culture has blocked the efforts of sustainability (Ali et al., 2021).

It is common to find organizations that operate within the framework of traditional operations to resist the use of new environmental-friendly technologies, as they do not have a sense of awareness or motivation (Tariq et al., 2023). Sustainability initiatives led by the leadership team and training programs have been proposed as change management techniques to neutralize this inertia. Moreover, studies indicate that skepticism and fear of operational disruption due to technology is part of operational inertia. Recycling initiatives can be viewed by the employees as a separate workload instead of a part of production efficiency (Ullah et al., 2022). In a bid to solve this, businesses ought to come up with incremental transition processes that will incorporate sustainability in phases that will not cause much resistance so that adoption becomes simpler.

The research analyzed how the government regulations, economic incentives and market conditions influence the organizational commitment towards the waste recycling. Quantitative findings demonstrated the moderate positive correlation of policy influences with organizational commitment ($b = 0.22$, $p < 0.01$). Nonetheless, the qualitative evidence showed that people had ambivalent views on the policy effectiveness where 45 percent of the participants demanded that environmental laws should be enforced more strictly. This conclusion is in line with the previous studies in 2023 (Rahman and Chowdhury, 2023). Such economic factors as subsidies and tax breaks were also found as possible motivators to adopt recycling. Nonetheless, respondents observed that the existing incentives are not enough to counter high costs of the recycling

infrastructure. This is reminiscent of research that noted that there must be increased government funding. The behavior of an organization was also determined to be affected by market conditions such as consumer demand of sustainable products. It was observed that recycling may be encouraged by the growing market pressure to engage in environmentally friendly behavior. This result aligns with the institutional theory approach, which puts emphasis on the influence of mimetic pressures in determining organizational behavior (Khan and Rehman, 2022). It was found that leadership commitment was the most important facilitator of organizational commitment to waste recycling since the relationship was strong and positive ($b = 0.47$, $p < 0.01$). This observation is in line with research, which highlights the central role of the top management in developing sustainability practices. This view was supported by qualitative responses, where seven out of ten were able to identify leadership support as a key success factor in recycling adoption. These lessons are in line with the institutional theory that states that leadership determines the organizational norms and behaviors. Transformational leadership has also been noted by past studies to play a vital role in creating a culture of environmental responsibility (Ibrahim and Ali, 2021). Based on these understanding, organizations must employ programs of leadership development that would emphasize decision-making based on sustainability. Furthermore, the leaders should go beyond mere actions and aims, by committing resources to long-term projects (Aziz et al., 2024). When a leader is involved in sustainability programs and shows hands-on behavior to recycle his/her waste, he/she has a higher likelihood to influence the employees to adopt the same behavior.

The results of the study are mostly in line with the existing studies on organizational commitment and waste recycling. As an example, the adverse effects of funding limitations on the meaning of recycling are consistent with the research by Nazir et al. (2022). Likewise, the beneficial effect of leadership commitment and workforce engagement also supports the results of the study that established a strong positive relationship between workforce engagement and commitment to recycling of the organization ($b = 0.35$, $p < 0.01$). This observation is consistent with the literature that highlighted the importance of employee participation in sustainability efforts (Saeed and Malik, 2020). A majority of 55 percent of the respondents indicated that their organizations were promoting employee participation whereas 45 percent were worried that there was low participation. Past research indicates the value of creating an inclusive workplace in which staff is motivated to take part in the sustainability objectives (Farooq and Tariq, 2023). Sustainability training, participatory decision-making, and performance-based incentives are some of the strategies that might be used to increase workforce engagement. Sustainability performance should also be incorporated into employee evaluation metrics by the companies so as to strengthen its significance. It would be also effective to define some career incentives which are connected with sustainability participation and encourage employees to follow environmentally friendly working style.

Nevertheless, the research also provides new information especially regarding the spinning business in Punjab, Pakistan. To illustrate, the fact that organization inertia is an important hindrance contributes to the sparse literature on cultural resistance to sustainability efforts in developing nations. There are also the mixed views on the effectiveness of the policies noting the

necessity of the increased enforcement of the regulatory framework and the financial incentives that have not been thoroughly investigated in the past research.

National policies, monetary policies, and market forces played a greater role in determining organizational commitment to recycling of wastes. The quantitative analysis showed the existence of a moderate positive correlation between policy and organizational commitment ($b = 0.22$, $p < 0.01$), which is also consistent (Rahman and Chowdhury, 2023). Nonetheless, the qualitative data indicated that 45 percent of the respondents considered the enforcement of policy as unsatisfactory. These results are consistent with the literature on regulatory loopholes of developing economies (Qureshi and Ahmed, 2024). As the enabling factor to the adoption of recycling, economic incentives were found, however, the respondents added that the current financial support was not enough to offset the high costs. Earlier studies have also underscored the need to have greater governmental financial support (Tariq et al., 2023). The external environment such as market conditions, especially the demand of consumers on sustainable products influenced the organizational behavior. As the institutional theory indicates, the paper proposes that the effects of the mimetic pressures can cause firms to engage in sustainable practices. In accordance with the results of the study, the following strategy recommendations can be made to increase the level of organizational commitment toward the recycling of waste in the spinning industry:

Offer monetary benefits i.e. subsidies, tax relief and low interest loans so as to counterbalance the expensive nature of recycling facilities. Promote the financial burden through public-private partnerships. Create management and supervisor training to make them more aware of sustainability practices. Reward leaders who show good intentions towards recycles. Introduce employee engagement strategies e.g. training sessions, incentive strategies and participation in decision making. Build a sustainable culture through the inclusion of employees in recycling programs. Strengthen the monitoring of environmental laws and imposing more severe punishment in case of non-conformity (Qureshi and Ahmed, 2024). Form partnerships with trade associations to come up with recycling standard guidelines. Awareness of sustainable products among the consumers should be encouraged to generate market demand on environmental friendly practices. Promote recycling efforts at the industry level so as to establish a competitive edge. Use modern recycling processes to enhance performance and save on expenditure. Work together with other research facilities in coming up with novel solutions specific to the spinning business.

5. Conclusion

The results of this research will be very useful in understanding the factors that can determine organizational commitment towards waste recycling in the spinning industry in Punjab. Through a mixed-methods research design, the study was able to obtain a quantitative and qualitative view through which it successfully provided a holistic picture of the dynamics at play. The quantitative findings show that commitment to recycling is of moderate levels to the organization with the leadership and the engagement of the workforce having a major impact in strengthening the recycling efforts. The main obstacle, however, was financial constraints which adversely affected the use and maintenance of recycling practices. Regression analysis also

established that leadership commitment and workforce engagement are good predictors of organizational commitment whereas financial constraints serve as a drag. The findings of ANOVA also reveal differences in commitment based on organizational roles which the managers are the most engaged as compared to the general workers. The qualitative results support these trends, as it has been found that despite most organizations having formal recycling policies, most do not enforce them on a consistent basis. The leadership is a key to the development of a recycling culture, yet the lack of policy execution and budget constraints are problematic. In certain organizations, employee involvement is promoted, although, general participation is less as there is no motivation and resources. The regulations set by government though there are, need to be enforced more stringently to effect positive recycling habits. The findings of the study are consistent with the review of the literature, referencing to the Theory of Planned Behavior, which proposes the fact that organizational attitudes, norms, and perceived behavioral control can affect the recycling habits. The Resource-Based View goes ahead to argue that companies that have more financial and technological resources have more chances of initiating successful recycling programs. Institutional Theory underlines the importance of the external forces in the formation of recycling commitments, and regulatory influences are one of the components that facilitate change. Comprehensively, this paper highlights the need of leadership, workforce participation, and supportive policies to boost recycling activities in the spinning industry. Sustainability initiatives may be improved by dealing with financial limitations on incentives, allocation of resources and enforcement of regulations. The new research might focus on industry-specific interventions to address the obstacles and enhance the commitment to waste recycling within an organization in the long term.

5.1 Limitations and Future Research

Although the study has some useful information, it has some limitations. To begin with, only spinning industry in Punjab, Pakistan was sampled; this could limit the extrapolation of the results to other regions or industries. The future research may increase the range of the scope to encompass other industries and regions. Second, the research paper was based on self-reported data, which can be biased. To prove the results, the objective measures, i.e., the rates of recycling or financial data, can be included into future studies. Lastly, the research concentrated on few factors that affect an organizational commitment. The study can be extended in future to examine other variables like supply chain dynamics and consumer behavior in order to have a more elaborate picture of recycling adoption.

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