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Atypical Recruitment Readiness for Neurodiverse Individuals in MNEs Operating in Sri Lanka: A Conceptualization

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Abstract

The research aims to introduce a concept development on recruitment preparedness for neurodiverse individuals in multinational companies (MNEs) that are operating in Sri Lanka. The conceptual study addresses the critical need of including atypical employees in the workforce. Neurodiversity is one of the most less emphasized groups of diversity in organizations which includes people with autism, ADHD, dyslexia, and other cognitive abilities. There cannot be seen significant adoption of Neurodiverse employees in Sri Lankan organizations and the majority of the literature reveals a lack of workplace adaptations for such recruitments, as well as alarming rates of societal stigmatization.

The study conceptualizes a model to bridge the gap in the readiness in the MNEs operating in Sri Lanka with the global trends and to identify the modes to integrate the neurodiverse talent in the workforce. The Person-Environment fit theory is used to concrete the discussion where it conceptualizes the recruitment readiness through primary determinants such as non-traditional recruitment systems, environmental adjustments and aligning with global trends. The suggested framework is supposed to elaborate on non-discriminatory practices, tailored training programs, and resource allocation to foster inclusivity. The study also addresses the advantages as well as challenges companies face when they recruit neurodiverse employees.

The literature analyzed from this conceptual study finds that adapting neurodiverse talent in an organization promote a more equal and inclusive work environment while also increasing organizational innovation. This conceptual study lays a solid platform for empirical research into the impact of neurodiverse persons' recruiting readiness in MNEs operating in Sri Lanka.

Keywords: *Atypical Recruitment, Inclusion, Multinational Enterprises, Neurodiversez*

1. Introduction

1.1 Overview of Neurodiversity

Neurodiversity is viewed as a notion where people show different neurological developments with themselves. It shows that people have diverse ways of brain functioning or cognitive thinking apart from the typical way. It recognizes and values such differences in people in the way they think, act, learn and process information. Neurodiversity views that people with such conditions are unique and have different abilities mostly in cognitive forms. In a managerial perspective, embracing neurodiversity means identifying the unique abilities and key strengths of people with neurological conditions and making them included in organizational work by giving them appropriate authority and room for creativity and innovation. This area is bringing out an increasing attention in most countries where managers often create an inclusive environment in workplace to effectively utilize the talent and contribution of neurodiverse individuals (Rollnik-Sadowska & Grabińska, 2024).

During the former periods of identifying neurodiversity as a condition, autism spectrum disorders (ASD) was only identified under the neurodiversity umbrella, but in latter examinations, much broader conditions were identified i.e., Attention-Deficit Hyperactivity Disorder (ADHD), Dyspraxia, Dyslexia, Dyscalculia, Dysgraphia, Alzheimer's disease, Depression, Epilepsy, Bipolar disorder, Tourette's syndrome and Autism (Mcgee, 2012; Rollnik-Sadowska & Grabińska, 2024).

Giving an emphasis on neurodiverse people and having discussions regarding them has been an important aspect for a country which deals with inclusive workforce concept. According to Thompson and Miller (2018) and White (2022), (as cited in Khan et al., 2022), "The unemployment rate for neurodivergent individuals across most developed countries is three times higher than that for people with physical or visible disabilities and six time higher than that for people without disabilities" (p.1340). This situation highlights that most neurodiverse people are unemployed, and it also creates a macro economic burden on the economy of a country. Therefore, it is best to utilize the neurodiverse people and include them in the workforce in a meaningful manner. The upcoming trends indicate that there is an inflating count of neurodivergent individuals in the population. It suggests that more than 20% of the global population can have people that manifest neurodivergent conditions (Honeybourne, 2019). Therefore, it clearly shows that neurodiverse people should be included in the workforce owing to these inflating figures to cope with global competition country-wise. Hyland and Connolly (2018) highlight that organizations that include neurodiverse individuals gain competitive advantages over competitors while gaining a revenue on average higher than 28% of competitors plus superior return on investments to shareholders. Also, the authors mention that such organizations easily improve their operational efficacy while improving brand image. Khan et al. (2022) highlight that organizations can achieve sustainable Human Resource Management (HRM) specifically within the arena of socially responsible HRM when they include individuals with neurodiversity conditions in the workforce.

1.2 Global trends in Neurodiverse recruitment

Employing neurodiverse individuals has brought forward unforeseen impacts on the business world. In the late 90's the term "neurodiversity" was coined and there onwards the world got a better and clearer view about the people who are different than what is socially perceived as "normal". Due to the attention the subject gradually received certain companies; tech giants including Google, IBM, SAP etc. took the initiative to enhance and reconceptualize their system of recruitment to include more diverse people in the sense of neurodivergent people in the carder (Austin & Pisano, 2017; Moran, 2019).

While some companies had a positive approach towards the effort of hiring neurodiverse people in the companies some companies were stuck between forced to hire them to bridge the gaps in workforce requirements or under-employ neurodiverse people just to provide them with mediocre employability (Rollnik-Sadowska & Grabińska, 2024). However, amidst both positive and negative situations of hiring neurodiverse people, there is a global tendency towards adjusting the existing recruitment structures to cater to the rising skill requirements in the knowledge-based economy (World Economic Forum, 2020).

1.3 Opportunities and challenges to Neurodiverse recruitment in MNEs

A multinational enterprise (MNE) is defined as a firm that operates in multiple countries, coordinating its activities across national borders. It can control production, distribution, or both, and may pursue different strategies in various markets and recruitment process of MNEs is crucial since it requires knowledge, expertise adaptability, innovation, and integration (Buckley & Casson, 2016). It is quite important to note that neurodiversity could be good for organizations to reach beyond typical goals. People who fall into the category of neurodiversity could be extremely good in attention to details and they can bring in fresh perspectives in that sense (O' Riordan & Passetti 2006) at the same time their focus could be greater than neurotypical individuals (Murray 2018). The creativity of the neurodiverse people is higher, and more creativity could be integrated with a neurodiverse approach (Baird et al., 2012). Along with these vibrant gains it should be noted that hiring/recruiting people with neurodiversity is no walk in the park. It has its own set of downsides such as neurodiverse people/individuals being socially awkward, inflexibility, hypersensitivity (APA, 2013) and at certain times difficulties of focusing attention on a single task (Castellanos et al., 2006) and heightened procrastination (Gray et al., 2016). Therefore, sometimes the recruitment requirements of MNEs could contradict with the potential challenges of neurodiverse people but it also elaborates that their strengths could be channeled for betterment of organizations as well.

1.4 Neurodiverse employability in Sri Lanka

Sri Lanka is known for being a country full of diversity but unfortunately neurodiversity is one very less researched upon areas in the country. Neurodiversity is a huge umbrella which captures many areas of neurological differences between people. In broader terms autism spectrum disorder and disabilities count as constituents of neurodiversity. In the Sri Lanka context as in 2017, 1.07% of the country's population is identified as could be placed in the autism spectrum (Island.lk, 2023). The ADHD rate in the childhood population in the country is from 5.1%- 6.5%. Therefore, the understanding here is that in terms of a classroom of about 40-50 students, at least 1-2 students have the neurodiversity of ADHD (Wijerathna et al., 2023). According to them, there is a rather remarkable deficiency in the information about being identified in the neurodiverse spectrum. With or without the knowledge of people there are higher chances of being in the neurodiverse spectrum (Menikdiwela & Vojtova, 2017). When it comes to the information about the country's situation in terms of acceptance or adaptation towards neurodiversity is quite unclear and the information about the employability or individual readiness in the industry for the neurodiverse people in the country is alarmingly low. However, the current situation in the country is not facilitating any specific workplace adaptation to have neurodiverse individuals in the workplace (Mombauer, 2018). Therefore, this study is quite a substantial requirement to check the readiness of the industries to adopt a neurodiverse work environment.

1.5 Research Gap and Objectives

There is a significant gap in literature for the specific area of neurodiversity in terms of many theoretical and managerial aspects. Due to lack of research and justified findings, many employers wonder about the actual reason for recruiting neurodiverse individuals in their companies. There is a clear-cut question there as persuasive plus sides of atypical recruitment have not yet been brought to attention with empirical results (Lefevre-Levy et al., 2023). Even with the current trends of positive approaches towards neurodiverse individuals, there is very surprisingly little research in industrial-organizational (I-O) psychology regarding neurodiversity in the workplace. Diversity is evaluated in organizations in terms of gender, race, and sexual orientation but the dimension of neurodiversity has not been elaborated enough through research. Even lesser number of research is available on the practical aspects or productivity of the inclusion of neurodiversity in organizations and the lack of empirical research is critical (Lefevre-Levy et al., 2023; Areheart, 2008) and significantly less research is conducted in the Sri Lankan context for the employment-related areas in any industry (Mombauer, 2018). Neurodiversity-related inclusivity coincides with the social models, Person-Environment fit model, and other certain theories, but in reality, this actually lacks a specific social or medical model to understand the functionality of individuals with neurodynamic conditions at the workplace (Volpone et al., 2022).

Prior studies have extensively explored neurodiverse recruitment in Western contexts, but research in developing economies, particularly in South Asia, is quite low in comparison and that imposes a significant gap in literature as well as the workforce DEI. This study addresses this gap by examining the specific variables, to elaborate readiness of MNEs operating in Sri Lanka in recruiting neurodiverse talent. By focusing on a developing economy, this research aims to contribute to a more global understanding of inclusivity in recruitment. With this background, the objective of the study is to identify the recruitment readiness for neurodiverse individuals in MNEs operating in Sri Lanka through the developed framework.

2. Literature Review

2.1 Typical and Atypical individuals

Two types of individuals can be identified in an organization: Typical individuals and atypical individuals. Typical individuals in this study are referred to as neurotypical individuals and are the individuals who work under normal working conditions which do not have any neurodiverse conditions. They have traditional thinking patterns and behaviour which allow them to navigate through their work under normal working conditions without requiring special accommodation (LeFevre-Levy et al., 2023c). In contrast, an atypical individual, or referred to as a neurodiverse individual in the scope of this study, is one that possesses neurodiverse conditions such as autism, ADHD, and dyslexia. They have different cognitive patterns and behaviour, and their social interactions may vary from the traditional social norms. These sorts of individuals need special accommodation since they don't fit traditional work settings in an organization (LeFevre-Levy et al., 2023c). For example, such an individual may need noise-cancelling headphones to keep attention to work. On the positive hand, they may also be valuable assets to organizations since they have innovative problem-solving abilities and diverse perspectives on looking at a certain state of affairs. Understanding these differences is crucial for organizations to develop inclusive recruitment practices. As a result, they can utilize the talent of both typical and atypical individuals, fostering a diverse and effective workplace environment. It caters to social responsibility as well.

2.2 Neurotypical and Neurodiverse

Currently, the world is getting more and more diverse, and almost all the clear-cut lines between different identities are melting and evolving into spectrums (Zindell, 2024). The world usually is set up to cater to the needs of the neurotypical people and every function is standardized on the neurotypical approaches (Volpone et al., 2022). Neurotypical means the simple understanding of what society perceives as "normal" in terms of having socially acceptable cognitive functioning (CIPD, 2018). Certain research findings elaborate the point that being "abled" or "disabled" is not actually a pattern of functioning or trait of disability, but it is how much one might deviate from the picture deemed by society as "normal" (Lefevre-Levy et al., 2023). Therefore it is always accepted that the neurotypical way is the ideal way or the more dominant way of doing things (Volpone et al., 2022). As repeatedly documented, neurotypical is the accepted way of human behaviour and it has been chosen as the benchmark for defining whether a person is normal or not normal which has been the fundamental reason for identifying a group of people as neurodiverse.

In contrast neurodiverse or neurodivergent implies the inability to have the cognitive functioning as per the society accepts as normal (CIPD, 2018). Neurodiversity is rather a broad term that shelters a few conditions such as attention deficit hyperactivity disorders (ADHD), autism (including Asperger's syndrome), depression, dyscalculia, dysgraphia, dyslexia, dyspraxia, learning disabilities, and Tourette syndrome (Burnett & Trerise, 2019; Richards et al., 2019; Rogers, 2017; Sumner & Brown, 2015). These are actually the major considered conditions of neurodiversity but unfortunately, there are many more in the neurodiverse spectrum such as schizophrenia, borderline, schizoaffective, and bipolar which never strike up as issues in the form of real or transparent conversations in the work environment (Kalita, 2023). Terms of getting identified as neurodiverse in the workplace have been misunderstood as being an illness which leads to many disheartening outcomes such as disempowering, diminishing, and demeaning to the respective individuals (Zindell,2024). Despite the actual capacity of neurodivergent people, the problem is the pervasive stigma and discrimination which is majority of the time just the misconceptions about the intelligence level of neurodivergent people which has eventually caused the issue of pushing them towards the invisible areas in career options and employment (Support the Guardian, 2023).

In terms of current-day workplaces, it could be tricky to understand the individuals and unlike certain differences or chronic health issues or visible disabilities sometimes neurodiversity is not that easy to diagnose or put in a clear position in terms of working conditions (May, 2024). Therefore, due to the clashes in the behavioural aspects of the neurotypical and neurodiverse people in an organization, it has always been one hectic job to maintain acceptable behaviour in an organization within the scope which defines “normal” behaviour. As identified by Faso et al. (2015) and Sheppard et al. (2016) the situation worsens between neurotypical and neurodiverse individuals due to misunderstandings. With this coming up as a rising issue, at the global level companies have gradually reached a comprehension about the cognition-based diversity in people.

2.3 Pros and cons of Neurodiverse workforce inclusion

Organizations foster an inclusive workplace not only because of social conscience. They have many advantages to having an inclusive workforce. With the development in technology and adoption of artificial intelligence to organizational processes, the nature of work is changing whereby organizations have identified the importance of neurodiverse workforce as a competitive advantage. A neurodiverse workforce has the ability to produce more specialized skills at work with differentiated thinking which can turn out to be a competitive advantage to most organizations (Autor et al., 2003; Neubert et al., 2015). According to the World Economic Forum (2020), the top five job skills in 2025 that most jobs would need are analytical thinking and innovation, complex problem-solving, critical thinking and analysis, active learning, and creativity which can be commonly utilized by a neurodiverse individual. LeFevre-Levy et al. (2023b) highlight that neurodiverse individuals are often creative and innovative, with higher problem-solving abilities in certain areas because of the differentiated way their brain functions. This often promotes successful accomplishments of organizational objectives in the workplace, especially unsolved matters can be resolved by applying such skills.

It has become difficult to managers to include neurodiverse people in the workforce of some organizations due to organizational problems. For example, as exposed by Khan et al. (2022), in management and organization studies literature, the following barriers regarding neurodiverse inclusion can be seen, i.e., discrimination, stigma associated with disclosure of conditions, stereotyping, resentments, negative attitudes among coworkers and supervisors, misconceptions, etc. Ditchman et al. (2016) has mentioned that most managers are in a misconception that neurodiverse individuals do not fit an organization under normal working conditions with other individuals hence need special accommodation. Also, some managers select neurodiverse talent only to keep up with legal compliances. In that case, they would also not be motivated to authentically improve the work environment of a neurodivergent individual (Farkas et al., 2020). Khan et al. (2022) have highlighted that some hiring managers have negative attitudes towards neurodiverse individuals and after such an individual is hired, that same attitude tends to build up within existing co-workers which in turn can affect negatively to the hired individual. This situation can lead to down-performance by the neurodiverse individual.

2.4 Neurodiverse and inclusive workplace

As highlighted by Khan et al. (2022) individuals with neurodivergent conditions often face discrimination in the workplace due to lack of clear policies and unincluded communication structures. Co-worker perceptions can negatively impact neurodiverse individuals. A more accommodating environment with tailored tasks, assistive technology and regular mentoring shall improve the working conditions of neurodiverse individuals. Positive acceptance with support from colleagues and managers is crucial and informal interactions and chats often help to build up necessary accommodation pleasance for a neurodiverse individual in a work environment. Management commitment, awareness and leadership are required to cultivate an inclusive work environment. Lack of understanding about accommodations and resentment can lead to negative coworker behaviours and it should be mitigated through organizational leadership engagement, such as awareness training. To create a neurodiverse workplace, organizations should inculcate that aspect in their recruitment and selection procedure (Spence, 1973; Kahn et al., 2022). According to the signaling theory, HR attributes that can be observed depict an interest towards neurodiverse candidates and it address gaps between employers and applicants (Connelly et al., 2011; Kahn et al., 2022). Such signals show the organizational preference towards neurodivergent individuals (Ali, 2016: Kahn et al., 2022).

Literature has revealed that three key practices can foster neurodiverse recruitment effectively. The first is ‘nondiscriminatory practices’ where the HR managers should be trained in diversity studies to reduce unconscious bias towards individual attributes. This ensures that hiring decisions are based on the skills and abilities of candidates and not demographics or disabilities. (Leslie, 2019: Kahn et al., 2022). The second is ‘resource practices’ that support recruitment effectiveness through utilizing specialized recruiters and inculcating training programmes for neurodivergent candidates and neurotypical candidates on inclusion while making the organization more accessible towards inclusivity (Leslie, 2019: Kahn et al., 2022). The third is ‘accountability practices’ which is more of a controlling mechanism in the traditional management process. Here, diversity goals are set by creating roles for neurodiverse candidates by including tailored performance metrics towards them. These practices should avoid superficial false progress and should incorporate systematic evaluations to measure progress and ensure targets are met (Leslie, 2019; Ryan & Tippins, 2004: Kahn et al., 2022). By integrating these practices, organizations can showcase their commitment towards diversity, attract neurodivergent candidates, and foster a truly inclusive workplace.

Finetuning the recruitment process to hire neurodivergent individuals for an organization is important. But for it to be effective, inclusion should be made which will help such individuals to contribute effectively to organizational work. Inclusion requires removing structural and environmental barriers that impede performance and engagement, which, if neglected, can reinforce stigma and isolation (Barnes, 2012; Arnold et al., 2010: Kahn et al., 2022). To influence coworker acceptance of neurodivergent individuals, their strengths should be made visible and given emphasis on (McLaughlin et al., 2004: Kahn et al., 2022). However, when making inclusivity, the managers should make sure to balance the preference given towards neurodiverse and neurotypical individuals. When diversity is poorly managed, it can lead to reverse discrimination where neurotypical individuals would feel that neurodivergent individuals receive unnecessary and unfair treatment. This can lead to disengagement and underperformance of neurotypical individuals and embarrassment or discomfort for neurodiverse individuals (Scott, 2018: Kahn et al., 2022). Leslie (2019) has mentioned that when diversity practices are seen as more false progress, and actions seem to be fake without meaning, it can lead to undermining fairness and negative impact on overall outcomes. Therefore, managers should be vigilant in setting a balance and mutual understanding between neurotypical and neurodivergent individuals. Gilbert and Stead (1999) have proposed that diversity initiatives should be framed to create equal opportunities for all individuals, rather than as special treatment for any group. Properly managing these perceptions will strengthen the positive impact of neurodiversity and inclusion efforts (Kahn et al., 2022).

2.5 Global trends and focus on Sri Lanka

In the global sense terminology such as neuroatypical, neurodivergent, and neurodiversity have been coined along with the neurodiversity movement which comprised of the autism rights movement which occurred during the late 90's. Judy Singer (1998) and Harvey Blume (1998) share the credit of cementing the term "neurodiversity" and however due to the movement of neurodiversity, it has been profoundly advocated the rights of individuals with neurological differences in securing job opportunities (Lefevre-Levy et al., 2023). With this uprise, Americans with Disabilities (ADA) has imposed a prohibition against discrimination of people due to the diversity of disabilities but it does not mention anything about specifically hiring people for their physical or neurological differences (Volpone et al., 2022).

With global history set as that, still, the world stands at a point where there are numerous obstacles for neurodiverse people to enter to the workforce. In certain cases reported in USA many organizations are forced to hire neurodiverse people to fill the extreme gaps in the workforce and on the other hand many neurodivergent people are pushed towards earning a job without proper since obtaining welfare is getting adversely difficult, and this situation could be applicable to European Union as well (Rollnik-Sadowska & Grabińska, 2024) hence the underemployment of these neurodiverse people is inevitable (Austin & Pisano, 2017). Contradicting to this situation many global organizations have paid substantial attention on specifically recruiting neurodiverse people for the organizations as a part of the diversity agenda (Lefevre-Levy et al., 2023 ; Austin & Pisano, 2017). Also picking up on the knowledge-based economy which quickly taking over the industries in the world types of competencies companies seek for have become different and diverse. Conventional skill requirements for jobs such as rote memory skills, time management, etc. are gradually declining (World Economic Forum, 2020), and as per the findings of Wegman et al., (2018) current economy requires a range of different skills and talents in individuals such as analytical thinking and innovation, active learning, complex problem-solving, critical thinking and analysis, and creativity (World Economic Forum, 2020). Considering the special abilities of neurodiverse people, many industry giants such as Microsoft, Google, IBM, Hewlett Packard, etc. have extensively expanded their recruitment programmes to include more neurodiverse or neuroatypical people in their carder (Austin & Pisano, 2017; Moran, 2019).

In terms of the global giants mentioned above, they are adapting many neurominority supportive systems in recruiting and retaining such workforce within the organization. Specifically having systems such as non-interview techniques for recruitment, having social partners (experts in the field, government, NGOs) to get the extra help that companies do not specialize in, nontraditional training programmes such as hangouts, comfortable gatherings, etc., training the neurotypical individuals and managers as well to adapt to the situation to collaborate with neurodiverse people and set up a supportive eco-system to balance the work environment (Austin & Pisano, 2017).

When compared to the global trends towards Sri Lanka, the situation is quite unfortunate. There is a significant gap in literature about the records of the number of people with neurodivergent capabilities and their employability. According to the few resources available in Sri Lanka, there are no specific systems to facilitate the neurodivergent individuals in various industries (Mombauer, 2018) even though the number of people who are born with autism or ADHD is quite significant (Menikdiwela & Vojtova, 2017; Wijerathna et al., 2023). Therefore, it is of paramount importance to test the industrial readiness in terms of MNEs to incorporate neurodiverse individuals in their working environment.

2.6 Person–Environment Fit Theory

While it stands ideally clear that neurodiverse individuals require special arrangements in the workplace, it also brings into attention that these individuals under focus can perform better under certain types of environments. Among the very few theories available to understand the situation with neurodiverse individuals, stigma, disability-related and Person-Environment Fit Theory stand out. Among them, application of the "Person-Environment Fit Theory" seems more generalizable compared to others (Johnson & Joshi, 2016). The basic idea of the theory is that some individuals are better suited for certain environments than for others. The magnitude of fitting into the organization has the ability to impact the motivation, behavior, and overall mental and physical health of an individual (De Cooman & Vleugels, 2022). However, Person-Environment Fit Theory has been a milestone in understanding the talent acquisition and neurodiversity in an organization to elaborate on how the individuals select and secure employment (Drader-Mazza et al., 2024). Not only that but also, in terms of the role of "fitting" in to an organization in terms of selecting jobs and adapting when entering an organization and how employers assess the individual potential to fit in is covered by the Person - Environment Fit Theory (Kristof-Brown et al., 2005).

According to Volpone et al., (2022), workplaces should adjust their setting to fit the individuals without imposing the burden on the neurodiverse individuals to alter themselves. Some industries and organizations have actually tried out this theory in trying to build more diverse environments to get in more neurodiverse individuals. They have taken an extra step forward and created particularly conducive environments to those who function differently (Volpone et al., 2022). In certain cases, such as rising of Silicon Valley, it was built by neurodivergent individuals (Faragher, 2016) and these tech giants as well as significant industries in the world now try to fit the oddballs in (Austin & Pisano, 2017) and they now encourage the concept of getting to know people to manage them better has come to play. As per the findings of Austin and Pisano (2017), neurodiverse people require special accommodation at workplace to maximize or leverage their abilities. If facilitated properly, neurodiverse individuals could bring in more direct benefits and fresh perspectives to organizations as they are wired differently from neurotypical people (Austin & Pisano, 2017). So, fitting the individuals in the right environment matters to get the best input of them to the organization.

It has been identified but quite a number of research that individual working environment should facilitate them to be themselves (Austin & Pisano, 2017), but it should not be misunderstood for what implies as trying to make the neurodivergent individual fit into the environment. Person-environment fit theory is applicable in terms of neurodiversity only when the companies change their environments so that they can leverage the strengths of the individuals (De Cooman & Vleugels, 2022). However, as identified by (Volpone et al., 2022) fit theories are limited and there is a void in literature to be bridged with fresh theories as well as novel frameworks for the purpose of understanding the perception individuals' experiences on organizational environmental changes to facilitate and accommodate neurodiverse individuals.

2.7 Recruiting Neurodiverse individuals

Recruitment is the very first stage of making neurodivergent job seekers inclusive within the organizations. Most companies that practice healthy levels of diversity, inclusion and ethical climates support neurodiversity (Volpone et al., 2022). As per the findings of Avery et al. (2013) there are higher tendencies of individuals looking for companies which facilitates more diversity which on the other hand means that when companies foster a stronger diversity climate more neurodivergent individuals will be seeking job opportunities within such organizations (von Schrader et al., 2014) not only in terms of neurodiversity but when companies have historically supported people with disabilities in employment preference for such organizations is also higher (von Schrader et al., 2014). So, literature supports the idea that people/individuals prefer work environments that fosters and facilitates an inclusive and diverse environment in the recruitment process (Avery et al., 2013).

With the background laid out above for the organizations, currently modern-day companies have actually restructured the recruitment process in order to include more neurodiverse people in the talent pool (Patton, 2019). The reconceptualization has shed light on the neurominority and some of such practices are hiring students who are diagnosed as neurodivergent, having recruitment programmes in schools/ colleges that admit only neurodivergent kids (Erickson et al., 2014), avoid heavy jargon (Association for Talent Development, 2018), review pre-employment screenings (Erickson et al., 2014), evaluate individuals for specific strengths, replacing traditional interviews and assess novel ways of problem-solving (Ovaska- Few, 2018). Even though much attention is paid to the recruitment of neurodiverse individuals in organizations only 11% of world's recruiters have adopted these reconceptualization of recruitment strategies (Dixon et al., 2003; Erickson et al., 2014).

Based on research by (Johnson & Joshi, 2016) recruitment of neurodiverse people has been quite a difficult process due to the non-disclosure which is resulted by social stigma. Confusion between disability and diversity, inadequate terminology for the neurodiverse spectrum, discrimination after disclosure, incorrect labeling of the conditions, etc. have resonated across many research findings as the reasons for the neurodivergent community for non-disclosure about their condition (Morris & Turnbull, 2007; Brown & Leigh, 2018). In return it has a loop effect; disclosing barriers impacts the recruitment process of many organizations. Then as it concludes in neurodivergent applicants to compete with neurotypical applicants under conditions which may be unfavourable by them, hence ultimately resulting in unemployment or underemployment (Volpone et al., 2022). Therefore, the situation has become complicated in making decisions with regards to recruitment in organizations when it comes to neurodiverse people. However, based on previous literature, if considered carefully still it is not impossible to make recruitment process (reconceptualization) more inclusive in terms of neurodiversity.

2.8 Strengths and challenges of neurodiverse recruitment

Hiring neurodiverse individuals could be a real game changer for companies. In terms of different categories of neurodiversity, individuals could be at the extreme ranges of capacities such as novelty idea and solution generation (Baird et al., 2012), holistic processing style (Geiger 2008), make connections others don't see (Shaywitz, 1986) and problem solving in quicker and more effective ways (Volpone et al., 2022)

The challenges could also entail many problematic situations such as difficulty with social cues and following particular social conventions (APA, 2013), sometimes repetitive behaviors and inflexible routines as well as being distracted when uninterested (APA, 2013; Castellanos et al., 2006). Sometimes contradicting with the strengths, certain cases of neurodiversity could lead to issues such as slow processing of information (von Károlyi & Winner, 2004) and poor memory capacity in terms of details (Breaux & Eichstadt, 2017).

Existing literature focusses on the transformative potential of inclusive recruitment in enhancing organizational innovation and employee satisfaction. For instance, research by Volpone et al., (2022) emphasizes the success of neurodiverse hiring programs in Western tech giants, yet these findings are rarely tested in culturally diverse and resource-constrained settings such as Sri Lanka (Mombauer, 2018). Similarly, studies by Schrader et al., (2014) & Avery et al. (2013) identify the importance of organizational policies and co-worker training, but these insights lack applicability to developing economies. This research builds on these studies by exploring how global best practices can be tailored to local socio-cultural and economic contexts. Moreover, it diverges from prior research by emphasizing the role of HR professionals in bridging systemic gaps, a dimension often overlooked in existing studies.

2.9 Ontological stance of the study

As per the existing literature and the availability of concepts the study adopts a constructivist ontological stance and it identifies that the recruitment readiness for neurodiverse individuals is not an objective phenomenon but it is more of a social construct which integrates the organizational practices, cultural norms, and individual perceptions (Monn & Blackman, 2017). According to the conceptualization recruitment readiness is a dynamic interaction between organizational systems, societal attitudes, and the lived experiences of neurodiverse individuals. As explained in the Person–Environment Fit Theory, the inclusivity of neurodiverse recruitment is a mutual adaptation of organizational environments and neurodiverse individuals. So this study is aiming at grounding constructivism by acknowledging and accepting the fluid and contextual nature of inclusivity and readiness in multinational enterprises (MNEs).

2.10 Conceptual Map

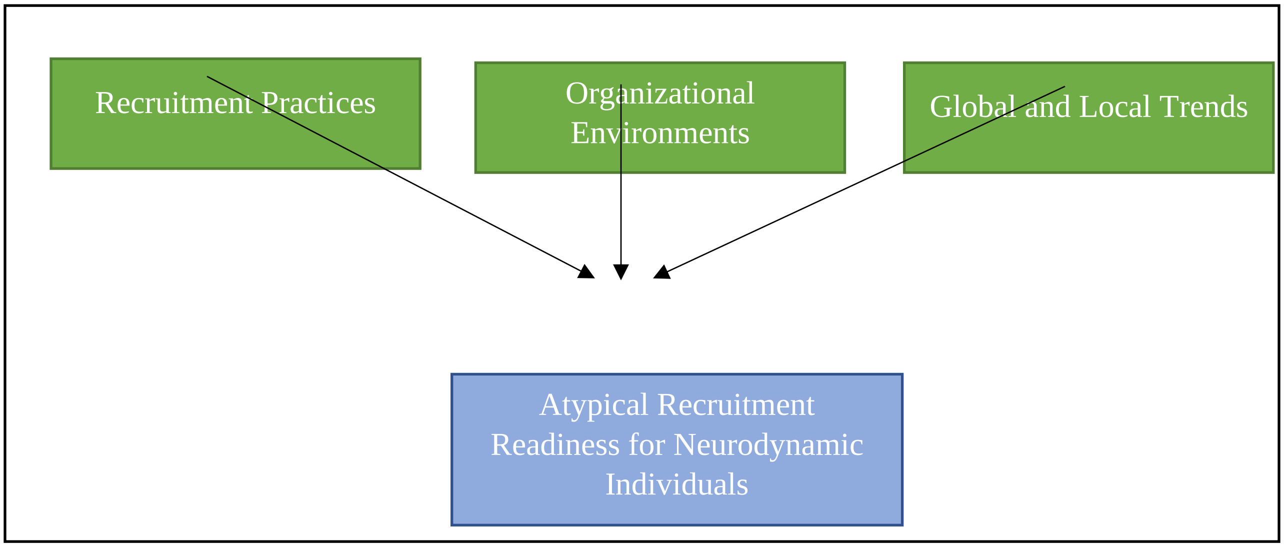

Figure 1: Conceptual Map

The main focus of the study is identifying the atypical recruitment readiness in MNEs in Sri Lanka with special focus on neurodiverse individuals. So based on literature the main constructs for the conceptualization were identified as below,

Main determinants of readiness –

1. Recruitment practices – HRM Perspective
   - Neurodivergent recruitment focus
   - Non-traditional recruitment systems
   - Reconceptualization of recruitment practices
2. Organizational environments
   - Non-discriminatory practices and policies
   - Resource practices
   - Accountability practices
3. Global and local trends – best practices
   - Seeking unconventional talents
   - Having social partners
   - Non traditional trainings/assessments

The study will further extend in reaching the identification of the existing or potential outcomes through readiness of the MNEs via recruitment of the neurodiverse individuals.

2.11 Novelty of the concept

The primary focus of this research is the atypical recruitment readiness in multinational enterprises (MNEs) in Sri Lanka with a special focus on neurodiverse candidates. In the global arena, companies in most developed countries have utilized the talents of neurodiverse individuals making such entities enriched in diversity and inclusion. But, contextually referring Sri Lanka, this is an underdeveloped area, and most Sri Lankan organizations does not utilize the talent of neurodiverse individuals but does their operations with traditional individuals. Therefore, this research shall bridge this gap by conceptualizing how MNEs operating in Sri Lanka can foster an inclusive workplace by cultivating inclusive recruitment processes that contributes to sustainable and equitable human resource practices. The novelty of this conceptual study lies in the exploration of integration between neurodiversity and atypical recruitment readiness within MNEs, a topic that has not been sufficiently addressed in the Sri Lankan context. When putting through the existing literature, especially in the Sri Lankan context, traditional diversity inclusion and general disability inclusion is well said and space for neurodiversity is left under-presented. This conceptual map welcomes the idea of ‘atypical recruitment readiness’ which is identified as the preparedness of organizations to identify, shortlist, attract and accommodate neurodivergent individuals to their workforce. This not only speaks about hiring such an individual for a job, but also extends to making the environment effective for them to work.

Furthermore, this study shall help to recognize the current state of atypical recruitment followed by multinational enterprises (MNEs) in Sri Lanka. It also examines how the said MNEs communicate their openness to neurodiverse talent in recruitment platforms such as social media, career fairs, websites, etc. and the extent to which the existing recruitment processes align with the principles of inclusivity and equity. The conceptual map also integrates the role of co-worker acceptance of a neurodiverse individual which is an essential factor in fostering inclusive work environments. This framework also discusses the importance of having neurodiverse individuals in the organization to foster sustainable HRM (Rollnik-Sadowska & Grabińska, 2024). By understanding and confirming the need if Sri Lankan MNEs are ready to accommodate neurodiverse individuals and what changes are needed in their recruitment systems, this research shall provide a foundation for future empirical studies as well. Hence, this exploration underlines the importance of moving beyond traditional recruitment paradigms to embrace neurodiverse talent, ultimately aligning organizational strategies with broader goals of diversity, equity, and inclusion.

3. Methodology

This study can be conducted as a qualitative research to capture the unbiased and nuanced perceptions and experiences of HR professionals involved in recruitment processes, grounded in an interpretivist paradigm and an inductive design, to explore the atypical recruitment readiness of Sri Lankan multinational enterprises (MNEs) with a specific focus on neurodiverse candidates. This conceptual paper which is enriched in literature and theory has clearly outlined a research framework for the said area laying a foundation for future empirical studies. This research clearly features the importance of understanding how neurodiverse recruitment practices are perceived, implemented, and accepted within organizations (Khan et al., 2022). This aligns with existing research that emphasizes the complexity of managing neurodiversity in workplaces and the importance of specific strategies for sustainable human resource management (Rollnik-Sadowska & Grabińska, 2024). This research can employ a multiple case study strategy to provide an in-depth examination of the readiness of Sri Lankan MNEs to recruit and integrate neurodiverse candidates. This strategy is clearly effective in exploring organizational practices, policies, and co-worker acceptance, as highlighted by LeFevre-Levy et al. (2023), who advocate neurodiversity as a critical aspect of diversity within organizational contexts.

As the data collection instrument, semi-structured interviews are proposed, it will allow in-depth exploration of organizational readiness and challenges. The primary data for the research can be collected using this method. This instrument is effective to properly understand the attitudes and perceptions towards neurodiverse individuals and can get clear-cut explanations regarding hiring processes of selected multinational enterprises. The interviews will adopt a cross-sectional design which will capture insights at a specific point in time to evaluate current practices. The targeted participants for the interviews include HR department individuals such as HR managers, HR executives, and hiring managers in MNEs operating in Sri Lanka who will provide a holistic understanding of recruitment practices across MNEs. These individuals play crucial roles in shaping recruitment strategies and policies. The semi-structured interview guide will help to collect relevant information to analyze and arrive at a conclusion as to organization's preparedness for neurodiverse recruitment, integration strategies, and perceptions of co-worker acceptance. As the data analytical tool, thematic analysis is proposed, as outlined by Braun and Clarke (2006). It helps to identify codes and themes to interpret patterns within qualitative data related to organizational readiness, recruitment challenges, and workplace integration and also it will provide direct insights for the study's theoretical framework and practical implications.

4. Implications of the Study

Given the lack of literature and empirical research, this study aims at filling the gap in literature for the discipline of neurodiverse workforce recruitment in various industries. The next concern of this research is to properly indicate the difference between having a disability and diversity which is a burning concern in different industries as well as the academic field. Not only that but also in terms of reconceptualizing the recruitment process to make it more inclusive of neurodivergent people, companies have made efforts, but it is unclear how to implement them as a result of the non-disclosure issues of the neurodivergent applicants and other social stigma which prevents applicants from owning up to the divergent situation they are in. So, the study aims at clarifying the reconceptualized recruitment processes, identifying their shortcomings and conceptualizing of a framework which is applicable to neurotypical and neurodivergent people when it comes to recruitment. There is a clear gap in literature in trying to apply a theory to justify the organizational behaviour of neurodiverse people, so this study conceptualizes a framework for empirical research which could pen a theory which captures the certain behaviours of neurodivergent persons. So, this will result in an integrated approach to benefit the neurodiverse individuals to fit in a diversity fostered workplace.

This research provides valuable insights to managers in multinational enterprises (MNEs) to foster an inclusive and diverse work environment. The signaling theory has explained how to effectively structure recruitment strategies to hire neurodivergent candidates. It also shows that the effort to hire neurodivergent individuals for an organization should be authentic and should not be due to compliance fulfilling. Managers should genuinely be invested in hiring and getting the work done by such individuals. It should also strengthen the organization's reputation. This research also helps managers clearly understand post-recruitment processes to be inculcated within organizations in hiring neurodivergent individuals. Managers can understand that the treatment of neurodivergent individuals should be fair and equitable, and they should maintain a balance between neurotypical and neurodivergent individuals to avoid possible disengagement and underperformance from both groups. This research also explains the benefits by fostering a proper balance between the two groups that can build cohesive teams and reduce the risk of stigma or bias. Ultimately this study helps managers to implement sustainable inclusion strategies that drive innovation, enhance individual satisfaction while ensuring the contribution towards overall success of the MNE.

5. Conclusion

This study elaborates on the critical need for recruitment readiness for neurodiverse individuals within the Sri Lankan context, which remains largely underexplored despite its growing significance globally. By utilizing the Person Environment Fit Theory, the research highlights the relationship between organizational practices, societal attitudes, and individual needs in fostering inclusivity. The findings of an empirical study are supposed to provide valuable insights for MNEs operating in Sri Lanka to align and strategize their recruitment practices with international standards while addressing challenges which they may encounter on the local context.

The study signifies the necessity of customized interventions, such as specialized training for HR professionals, policy frameworks for inclusivity, and awareness campaigns to reduce social stigma. These efforts can bridge the gap between global trends and local realities, ensuring that neurodiverse individuals can effectively join and contribute to the workforce.

6. Limitations and Avenues for Future Research

This study is conceptual in nature, and it highlights the need for empirical research to enhance its applicability. Future research could explore neurodiverse recruitment using quantitative and qualitative methods, enabling a more comprehensive understanding of the underlying dynamics. A limitation of this study is the multiple case study approach that has been suggested to be used. While it would provide valuable insights, focusing on a single case study in future research could allow for more in-depth exploration. By concentrating on one multinational enterprise (MNE), researchers could expand the participant pool to include not only HR managers but also individuals at various levels. This would facilitate a better understanding of perceptions of coworkers regarding neurodiverse individuals, examining their willingness to collaborate effectively. Additionally, the main focused variable here is recruitment and it limits the scope of the study.

Future studies could utilize variables such as training and development, performance evaluation, decision-making inclusion, and cultural influences to provide a more holistic view of managing neurodiverse workforces. This study is focused on Sri Lankan MNEs which limits the insights being gathered. Hence future researchers could expand the participant pool to include foreign individuals in international subsidiaries and MNE locations which can also cover cross-cultural impacts on neurodiverse recruitment. It can provide more comparative analysis into how cultural dimensions can influence the acceptance and success of neurodiverse individuals within global organizations. By addressing these limitations, future research can provide a broader and more nuanced understanding of neurodiversity in the workplace.

Future empirical research can be build on this foundation by both qualitatively and quantitatively assessing the identified variables and exploring the long-term outcomes of inclusive recruitment practices. By addressing these gaps, organizations can enhance their readiness to embrace diversity, thereby driving innovation and fostering a more equitable society.

References

Ali, M. (2016). Impact of gender-focused human resource management on performance: The mediating effects of gender diversity. *Australian Journal of Management*, *41*(2), 376–397. https://doi.org/10.1177/0312896214565119

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC. https://doi.org/10.1176/appi.books.9780890425596

Areheart, B. A. (2008). When disability isn't just right: The entrenchment of the medical model of disability and the Goldilocks dilemma. *Indiana Law Journal*, 83, 181–232.

Arnold, B., Easteal, P., Easteal, S., & Rice, S. (2010). It just doesn't add up: ADHD/ ADD, the workplace and discrimination. *Melbourne University Law Review*, *34*(2), 359-391.

Austin, R. D., & Pisano, G. P. (2017). Neurodiversity as a Competitive Advantage. https://hbr.org/2017/05/neurodiversity-as-a-competitive-advantage

Autor, D. H., Levy, F., & Murnane, R. J. (2003). The Skill Content of Recent Technological Change: An Empirical Exploration. *The Quarterly Journal of Economics*, *118*(4), 1279–1333. https://doi.org/10.1162/003355303322552801

Avery, D. R., Volpone, S. D., Stewart, R., Luksyte, A., Hernandez, M., McKay, P. F., & Hebl,M. R. (2013). Examining the draw of diversity: How diversity climate perceptions affect job pursuit intentions. *Human Resource Management*, 52, 175–193. https://doi.org/10.1002/hrm.21524

Baird, B., Smallwood, J., Mrazek, M. D., Kam, J. W., Franklin, M. S., & Schooler, J. W. (2012). Inspired by distraction: Mind wandering facilitates creative incubation. *Psychological Science*, 23(10), 1117–1122. https://doi.org/10.1177/0956797612446024

Barnes, C. (2012). Understanding the social model of disability. In N. Watson, A. Roustone, & C. Thomas (Eds.), *Routledge handbook of disability studies* (pp. 12-29). London, UK: Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, *3*(2), 77-101.

Breaux, K., & Eichstadt, T. (2017). Pearson clinical assessment solutions: A dyslexia toolkit [White paper]. *Pearson Assessments*. https://www.pearsonclinical.co.uk/Sitedownloads/Productpdfs/dyslexia-toolkit-white-paper.pdf.

Brown, N., & Leigh, J. (2018). Ableism in academia: Where are the disabled and ill academics? Disability & Society, *33*(6), 985–989, doi: 10.1080/09687599.2018.1455627

Buckley, P. J., & Casson, M. (2016). The future of the multinational enterprise. *Springer*.

Burnett, K., & Trerise, M. (2019, March). Embracing neurodiversity in the workplace. *Training Journal*. Retrieved from www.trainingjournal.com/articles/features/tj-magazine-embracing-neurodiversity-workplace

Castellanos, F. X., Sonuga-Barke, E. J. S., Milham, M. P., & Tannock, R. (2006). Characterizing cognition in ADHD: Beyond executive dysfunction. *Trends in Cognitive Sciences*, *10*(3), 117–123.

CIPD. (2018). Neurodiversity at work. Retrieved from www.cipd.co.uk/Images/neurodiversityat-work_2018_tcm18-37852.pdf

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2010). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39–67. https://doi.org/10.1177/0149206310388419

De Cooman, R., & Vleugels, W. (2022). Person–Environment Fit: Theoretical Perspectives, Conceptualizations, and Outcomes. In Oxford Research Encyclopedia of Business and Management. *Oxford University Press*. https://doi.org/10.1093/acrefore/9780190224851.013.377

Ditchman, N., Kosyluk, K.,Lee, E.-J., & Jones, N. (2016).How stigma affects the lives of people with intellectual disabilities: An overview. In K. Scior & S. Werner (Eds.), Intellectual disability and stigma: Stepping out from the margins (pp. 31-47). London, UK: Palgrave Macmillan.

Dixon, K. A., Kruse, D., & Van Horn, C. E. (2003). Restricted access: A survey of employers about people with disabilities and lowering barriers to work, Rutgers University. New Brunswick, NJ:Heldrich Center for Workforce Development.

Drader-Mazza, N., Lopez-Kidwell, V., Kanwal, F., Reger, R. K., & Vogus, T. J. (2024). The Double Empathy Problem and Person-Environment Fit: Mutual Understanding and Bidirectional Adjustment in Autistic Talent Acquisition. Human Resource Management. https://doi.org/10.1002/hrm.22258

Faragher, J. (2018). Thinking differently has made us winners at work. *People Management*, 32-36.

Farkas, T. N., Mendy, J., & Kargas, N. (2020). Enhancing Resilience in Autistic Adults Using Community-based Participatory Research: A Novel HRD Intervention in Employment Service Provision. *Advances in Developing Human Resources*, *22*(4), 370–386. https://doi.org/10.1177/1523422320946293

Faso, D. J., Sasson, N. J., & Pinkham, A. E. (2015). Evaluating posed and evoked facial expressions of emotion from adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 45, 75–89. https://doi.org/10.1007/s10803-014-2194-7

Geiger, G., Cattaneo, C., Galli, R., Pozzoli, U., Lorusso, M. L., Facoetti, A., & Molteni, M. (2008). Wide and diffuse perceptual modes characterize dyslexics in vision and audition. Perception, *37*(11), 1745–1764. https://doi.org/10.1068/p6036

Gilbert, J. A., & Stead, B. A. (1999). Stigmatization revisited: Does diversity man agement make a difference in applicant success? *Group & Organization Management*, *24*(2), 239-256. https://doi.org/10.1177/1059601199242006

Gray, S.A., Fettes, P., Woltering, S., Mawjee, K., & Tannock, R. (2016). Symptom manifestation and impairments in college students with ADHD. *Journal of Learning Disabilities 49*(6):616–630. https://doi.org/10.1177/00222 19415576523

Honeybourne, V. (2019). The Neurodiverse Workplace: An Employer's Guide to Managing and Working with Neurodivergent Individuals, Clients and Customers. *Jessica Kingsley Publishers.*

How to create a neurodiverse workplace _ Missing Perspectives. (n.d.).

Hyland, S., & Connolly, J. (2018, October 29). Companies Leading in Disability Inclusion Have Outperformed Peers, Accenture Research Finds. *Newsroom*. https://newsroom.accenture.com/news/2018/companies-leading-in-disability-inclusion-have-outperformed-peers-accenture-research-finds

Johnson, T. D., & Joshi, A. (2016). Dark clouds or silver linings? A stigma threat perspective on the implications of an autism diagnosis for workplace well-being. *Journal of Applied Psychology*, *101*(3), 430–449. https://doi.org/10.1037/apl0000058

Kalita, S. M. (2023). What Workplaces Misunderstand About Neurodiversity. https://time.com/charter/6309300/what-workplaces-misunderstand-about-neurodiversity/

Khan, M. H., Grabarski, M. K., Ali, M., & Buckmaster, S. (2022). Insights into Creating and Managing an Inclusive Neurodiverse Workplace for Positive Outcomes: A Multistaged Theoretical Framework. *Group & Organization Management*, *48*(5), 1339–1386. https://doi.org/10.1177/10596011221133583

Kristof-Brown, A., Barrick, M. R., & Stevens, C. K. (2005). When opposites attract: A multi-sample demonstration of complementary person-team fit on extraversion. *Journal of Personality*, *73*(4), 935–958. https://doi.org/10.1111/j.1467-6494.2005.00334.x

LeFevre-Levy, R., Melson-Silimon, A., Harmata, R., Hulett, A. L., & Carter, N. T. (2023b). Neurodiversity in the workplace: Considering neuroatypicality as a form of diversity. *Industrial and Organizational Psychology*, *16*(1), 1–19. https://doi.org/10.1017/iop.2022.86

LeFevre-Levy, R., Melson-Silimon, A., Harmata, R., Hulett, A. L., & Carter, N. T. (2023c). Neurodiversity in the workplace: Considering neuroatypicality as a form of diversity. *Industrial and Organizational Psychology*, *16*(1), 1–19. https://doi.org/10.1017/iop.2022.86

Lefevre-Levy, R., Melson-Silimon, A., Harmata, R., Hulett, A. L., & Carter, N. T. (2023). Neurodiversity in the workplace: Considering neuroatypicality as a form of diversity. Industrial and Organizational Psychology, *16*(1), 1–19. https://doi.org/10.1017/iop.2022.86

Leslie, L. M. (2019). Diversity Initiative Effectiveness: A Typological Theory of Unintended Consequences. *Academy of Management Review*, *44*(3), 538–563. https://doi.org/10.5465/amr.2017.0087

Mcgee, M. (2012). Neurodiversity. Contexts, *11*(3), 12–13. https://doi.org/10.1177/1536504212456175

McLaughlin, M.E., Bell, M. P., &Stringer, D. Y. (2004). Stigma and acceptance of persons with disabilities: Understudied aspects of workforce diversity. *Group & Organization Management*, *29*(3), 302-333. https://doi.org/10.1177/1059601103257410

Menikdiwela, K. R., & Vojtova, V. (2017). *Journal of Education and Practice*, *8*(2), 12-24.

Mombauer D. (2018). SLYCAN Trust. Autism in Sri Lanka: Awareness and Acceptance. Retrieved on 17-11-2024. Available at https://www.slycantrust.org/post/autism-in-sri-lanka-awareness-and-acceptance#:~:text=There%20is%20also%20a%20disturbing,Sri%20Lanka%20at%20the%20moment.

Moon, K., & Blackman, D., (2017). A guide to ontology, epistemology, and philosophical perspectives for interdisciplinary researchers. Integration and Implementation Insights. Retrieved on 14 – 01-2025. Available at https://i2insights.org/2017/05/02/philosophy-for-interdisciplinarity/

Morris, D., & Turnbull, P. (2007). A survey-based exploration of the impact of dyslexia on the career progression of UK registered nurses. *Journal of Nursing Management*, 15,97–106. https://doi.org/10.1111/j.1365-2934.2006.00649.x

Murray, D. (2018). Monotropism: An interest-based account of autism. In Volkmar, F. R. (Ed.). *Encyclopedia of autism spectrum disorders*. Springer. https://doi.org/10.1007/978-1-4614-6435-8_102269-1

Neubert, J. C., Mainert, J., Kretzschmar, A., & Greiff, S. (2015). The Assessment of 21st Century Skills in Industrial and Organizational Psychology: Complex and Collaborative Problem Solving. *Industrial and Organizational Psychology*, *8*(2), 238–268. https://doi.org/10.1017/iop.2015.14

O'Riordan, M., & Passetti, F. (2006). Discrimination in autism within different sensory modalities. *Journal of Autism and Developmental Disorders*, *36*(5), 665–675. https://doi.org/10.1007/s10803-006-0106-1

Ovaska-Few, S. (2018). Promoting neurodiversity: A pilot program at EY recruits workers with autism. *Journal of Accountancy*. Retrieved from www.journalofaccountancy.com/issues/2018/jan/ey-pilot-program-workers-with-autism.html

Patton, E. (2019). Autism, attributions and accommodations: Overcoming barriers and integrating a neurodiverse workforce. Personnel Review, 48, 915–934. https://doi.org/10.1108/PR-04-2018-0116

Richards, J., Sang, K., Marks, A., & Gill, S. E. (2019). I've found it extremely draining: Emotional labour and the lived experience of line managing neurodiversity. Personnel Review,48, 1903–1923. https://doi.org/10.1108/PR-08-2018-0289

Rogers, C. (2017). How to hire neurodiverse people. Marketing Week. Retrieved from www.marketingweek.com/brand-benefits-neurodiversity/

Rollnik-Sadowska, E., & Grabińska, V. (2024). Managing Neurodiversity in Workplaces: A Review and Future Research Agenda for Sustainable Human Resource Management. *Sustainability*, *16*(15), 6594. https://doi.org/10.3390/su16156594

Rollnik-Sadowska, E., & Grabińska, V. (2024). Managing Neurodiversity in Workplaces: A Review and Future Research Agenda for Sustainable Human Resource Management. Sustainability (Switzerland), *16*(15). https://doi.org/10.3390/su16156594

Ryan, A. M., & Tippins, N. T. (2004). Attracting and selecting: What psychological research tells us. *Human Resource Management*, *43*(4), 305–318. https://doi.org/10.1002/hrm.20026

Scott, D. a. I. (2018). Understanding White Americans' Perceptions of "Reverse" Discrimination: An Application of a New Theory of Status Dissonance. *In Advances in group processes* (pp. 129–157). https://doi.org/10.1108/s0882-614520180000035006

Shaywitz, S. E. (1996). Dyslexia. Scientific American, *275*(5), 98–104. https://doi.org/10.1038/scientificamerican1196-98

Sheppard, E., Pillai, D., Wong, G. T.-L., Ropar, D., & Mitchell, P. (2016). How easy is it to read the minds of people with autism spectrum disorder? Journal of Autism and Developmental Disorders, 46, 1247–1254. https://doi.org/10.1007/s10803-015-2662-8

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355. https://doi.org/10.2307/1882010

Sumner, K. E., & Brown, T. J. (2015). Neurodiversity and human resource management: Employer challenges for applicants and individuals with learning disabilities. The Psychologist-Manager Journal, 18, 77–85. https://doi.org/10.1037/mgr0000031

Support the Guardian. (n.d.). https://www.theguardian.com/global-development/2023/aug/25/wired-differently-how-neurodiversity-adds-new-skillsets-to-the-workplace

Thompson, E., Miller, D. J., CIPD, & Uptimize. (2018). Neurodiversity at Work. In Neurodiversity at Work. https://www.cipd.org/globalassets/media/knowledge/knowledge-hub/guides/neurodiversity-at-work_2018_tcm18-37852.pdf

Volpone, S. D., Avery, D. R., & Wayne, J. H. (2022). SHAPING ORGANIZATIONAL CLIMATES TO DEVELOP AND LEVERAGE WORKFORCE NEURODIVERSITY. In Neurodiversity in the Workplace: Interests, Issues, and Opportunities (pp. 16–59). *Taylor and Francis.* https://doi.org/10.4324/9781003023616-2

von Károlyi, C., Winner, E., Gray, W., & Sherman, G. F. (2003). Dyslexia linked to talent: Global visual-spatial ability. *Brain and Language*, *85*(3), 427–431. https://doi.org/10.1016/S0093-934X(03)00052-X

von Schrader, S., Malzer, V., & Bruyère, S. M. (2014). Perspectives on disability disclosure: The importance of employer practices and workplace climate. *Individual Responsibilities & Rights Journal*, 26, 237–255. https://doi.org/10.1007/s10672-013-9227-9

von Schrader, S., Xu, X., & Bruyère, S. M. (2014). Accommodation requests: Who is asking for what? *Rehabilitation Research, Policy, and Education*, 28, 329–344.

Wegman, L. A., Hoffman, B. J., Carter, N. T., Twenge, J. M., & Guenole, N. (2018). Placing job characteristics in context: Cross-temporal meta-analysis of changes in job characteristics since 1975. *Journal of Management*, 44(1), 352–386. https://doi.org/10.1177/0149206316654545

White, S. (2022, March 10). Australian workplaces have a big neurodiversity gap. *The Sydney Morning Herald*. https://www.smh.com.au/business/workplace/australian-workplaces-have-a-big-neurodiversity-gap-20220215-p59wiy.html

Wijerathna, N., Wijerathne, C., Wijeratne, H., Wijesiri, C., Wijerathna, R., Wijerathna, W., Warnasekara, J., Agampodi, T., & Rajapakse, S. (2023). Knowledge and attitudes on attention deficit hyperactivity disorder (ADHD) among school teachers in Anuradhapura district, Sri Lanka: a descriptive cross-sectional study. *BMJ Open*, 13(11). https://doi.org/10.1136/bmjopen-2023-080039

World Economic Forum. (2020, October 21) What are the top 10 job skills for the future? https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/

World Economic Forum. (2020, October 21) What are the top 10 job skills for the future? https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/

Zindell, J. L. (n.d.). Neurodiversity in Workplace Neurodiversity in Workplace Neurodiversity in the Workplace 1 Neurodiversity in the Workplace. https://scholars.unh.edu/ms_leadership/128

Supply chain disruptions and its impact on retail orders: The case of ABC company

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Abstract

This study primarily aims to determine the causes of the decline in retail orders caused by the products' fluctuating prices and worldwide price competitiveness, as well as the tactics ABC Company may take to efficiently handle disruptions to its supply chain. The apparel manufacturing company ABC Company has seen a notable decrease in retail orders in the European market in recent years. Managers of the companies have determined that a number of factors have led to this downturn. These issues include the COVID-19 pandemic's broad disruptions, the impact of civil unrest in parts of Europe, political and financial instability, and the increasing competition from global apparel manufacturers. Comprehending these obstacles is essential in formulating tactics to recapture market share and maintain operational stability. Hence, qualitative research was carried out, where data was collected through interviews that took place over the phone and over WhatsApp, in addition to on-site interviews at the factory's manufacturing plant and departmental offices. We conducted the interviews in both English and Sinhala, primarily in Sinhala due to the participants' limited English proficiency. Eight middle- and lower-level firm managers with extensive knowledge of both the business's operations and the surrounding environment. The study's conclusions can be applied to build a supply chain that is more adaptable and able to handle unforeseen events and disruptions, which will lessen the negative effects on operations and ensure a more flexible and durable business model.

Keywords – *Supplier Relationship Management, Supply Chain, Disruptions, Capacity, Competition, Collaboration, Delays*

1. Introduction

ABC Company Pvt Ltd is a private limited company in Sri Lanka which manufactures and exports apparel to Retailers in Foreign countries. The company's product categories include baby and kids wear, lingerie, night wear, and lady's casual wear. The raw materials needed for manufacturing of this company are procured from foreign suppliers and their main customer base is the European apparel retail market. In addition to that, ABC company has the capacity to offer a daily production output of 115 000 units.

Although at present, the world is in a post-pandemic situation, the apparel manufacturing and exporting industry in Sri Lanka is still experiencing the effects of the economic downturn that resulted from the pandemic due to the significant depreciation of the Sri Lankan rupee (Thahara et al., 2021). Also, with the effects of the Sri Lankan rupee being depreciated against the US dollar by 44.3% during the year up to 13th May 2022 (Weekly Economic Indicators, 2022), the cost of sourcing raw materials needed for manufacturing was increased. In addition to that, the cost of transportation was also increased. This resulted in an increase in price for apparel products of Sri Lankan apparel exporters since they required a higher price to cover their cost of production and to maintain their profit margins for products which are being exported. Apart from that, according to Singh (2022), due to the escalation of the Russia – Ukraine war which began in February 2022, resulted in a significant decrease in demand for many products including apparel which were being exported to Europe.

1.1 Research Problem

The supply chain disruptions in the European apparel market due to the Russia- Ukraine war resulted in a decrease in retail orders for apparel products of ABC Company. The retail orders of ABC Company are further adversely affected by the increase in the price of ABC Company's products due to the limited flexibility of the manufacturing plant and increase in raw material cost and transportation and logistics cost following the effects of post-pandemic economic conditions. This has resulted in diminishing the global price competitiveness of ABC Company's products against the global market. Hence, the Sales income of ABC company has significantly decreased during the past few years.

Figure 1

Reduction in Sales Income of Night Wear Product Category from 2021 to 2022.

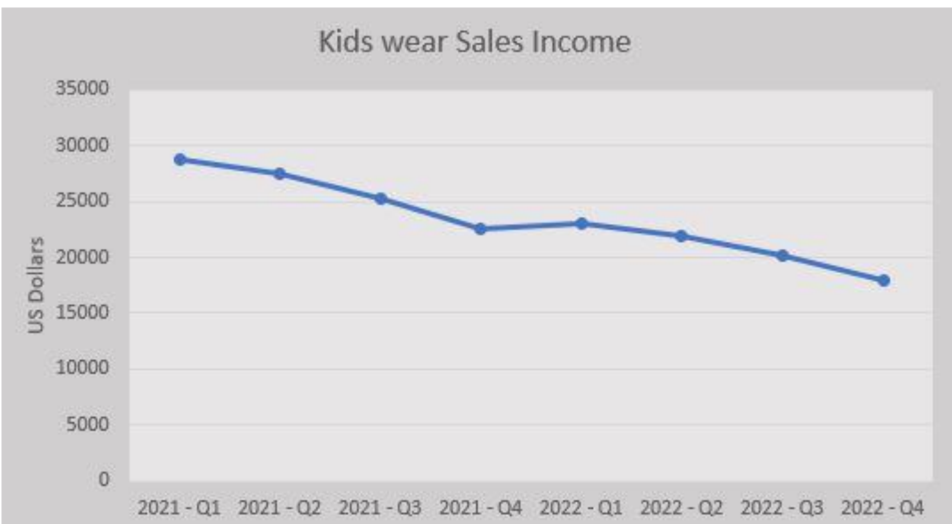
Note. The above figure demonstrates the quarterly sales of ABC company from night wear product category during the years 2021 and 2022.

According to the above diagram, apart from the seasonal increase in sales in quarter 1 of each year, it can be observed that there is an overall decrease in the trend of sales. For instance, although the nightwear sales in quarter 1 of 2021 is USD 22 000, the quarterly sales of quarter 1 of 2022 have dropped to USD 19 360. Therefore, there is an approximately 12% decrease in sales over each quarter compared to the quarterly sales in the previous year.

Apart from the decrease in sales of the night wear product category, Kids wear is another major product category of ABC company where there was a significant decrease in quarterly sales in 2022 compared to the quarterly sales in 2021.

Figure 2

Sales Income of Kids Wear Product Category From 2021 to 2022.



Note. The above diagram demonstrates the quarterly sales from Kids wear product category across each quarter of 2021 and 2022.

According to the above graph, we can identify that there is a significant decrease in sales income of approximately 20% in kids wear product category where the quarterly sales from quarter 1 of 2021 to quarter 4 of 2022 has decreased from USD 28 800 to USD 18 000 respectively.

1.2 Research Questions

1. What factors cause supply chain disruptions in ABC company?
2. What extent has it affected ABC Company's retail orders?
3. What strategies can ABC Company implement to effectively manage supply chain?

2. Literature Review

2.1 Supply Chain Disruptions

Unexpected incidents that stop a supply chain's regular operations are known as supply disruptions. More than ever before, many businesses have witnessed disruptions and tests in their supply chains. To put it succinctly, supply chain disruptions are now the norm, according to Grossman et al. (2021). For instance, according to BCI's 2021 Supply Chain Resilience report, 25% of businesses encountered more than ten interruptions in 2020 as opposed to fewer than 5% in 2019 (Elliott, 2021).

The main issues brought about by COVID 19 during and after pandemics include labor shortages at production sites, restrictions on the number of containers that can be used to ship goods to buyers and customers' locations, a staffing shortage as a result of quarantines, lower supply, or medical safety concerns, limitations on the transportation and distribution of goods and services, understaffed and undersupplied stores, and store closures (Kottala & Kotzab, 2019). Lack of demand for specific commodities, difficulties reaching customers due to delivery limits, and the unavailability of transport operating workers are all contributing factors. According to Hussain et al. (2019), the effects include a shortage of production, unfulfilled customer orders, a spike in inventory, slow shipments, inconsistent delivery, frequent failures of delivery schedules, fewer products on the shelves, a diminished ability to serve customers, inconsistent delivery, a flawed timing model, increased costs, avoidance of shipping, delayed delivery timelines, and more volatile demand patterns.

To improve supply chain efficiency, just-in-time initiatives and growing outsourcing/offshoring trends are being implemented. These activities may, however, also increase the supply networks' susceptibility to interruptions. Many risk identification and disruption-mitigation tactics have been the subject of extensive research in recent years. Operational solutions for handling interruptions can, in general, be reactive (rerouting and demand management) or proactive (inventory or sourcing strategies) (Tomlin, 2006). Businesses are becoming increasingly concerned about supply chain disruptions, particularly those that rely on international networks of suppliers with high levels of efficiency and low inventories (Knemeyer et al., 2008). Short- and long-term financial results are significantly impacted by supply chain disruption announcements (Hendricks and Singhal, 2005).

These are the supply chain disruptions adversely affected by ABC Company's operations. Such as the limited flexibility of the manufacturing plant, an increase in raw material costs, and transportation and logistics costs. Because of the above-mentioned supply disruptions, demand for the apparel products of ABC Company and retail orders of ABC Company decreased.

2.2 Supplier Relationship Management (SRM)

Both upstream supply chain and downstream supply chain are important for ABC company in managing their supply chain as they source materials required for manufacturing from foreign suppliers and manufacture and deliver their finished apparel products to foreign retailers.

At this juncture, the concept of supplier relationship management (SRM) is pivotal in ensuring the effectiveness of supply chain management. According to Akamp and Müller (2013) supplier relationship management is the practice of planning, developing, executing, and monitoring the relationship that the company has with current and potential suppliers. Supplier relationship management focuses on the procedures that are utilized to maintain the interaction between firms and suppliers that belong to the firm's upstream supply chain (Chopra & Mendil, 2013, as cited in Bhagya et al., 2022).

Moreover, Flexibility and adaptability in supplier relationship management are recognized as the two fundamental characteristics in supplier relationship management as building flexible and adaptive relationships with suppliers provide an opportunity to secure the continuity of the flow of processes in situations of external shock arising from the macro-environment. Apart from that, building these relationships with suppliers provides the viability to effectively address the issues relating to supply chain disruptions and supply chain uncertainty (Wieteska, 2016). Flexibility in relationships with suppliers in the supply chain will enable an organization to effectively respond to the changes in supply and demand of products and thus provides a buffer that assists in responding to unpredictable changes in the supply chain environment (Fayezi et al., 2014). In addition, according to Tachizawa and Thomsen (2005) disruptions and uncertainty arising in the areas of the focal company, upstream and downstream of the supply chain where the purchasing department has no direct influence on the occurrence of such disruptions, can be addressed through flexibility of supplier relationships. Adaptability in supplier relationship management is specifically used in response to the significant uncertainty coming from the external environment of the supply chain (Chan et al., 2009).

Therefore, in response to issues such as supply chain disruptions and uncertainty arising from the external environment, flexibility and adaptability of supplier relationship management facilitate effective coordination and collaboration among supply chain members which will enable an organization to swiftly adapt to changes in demand and supply for products of an organization in the industry.

2.3 Retail Orders

Retailing is the process of selling goods and services to final consumers and retailers are the individuals or organizations involved in this process in linking the manufacturer to the final consumer where they play a crucial part in the distribution channel (Peterson & Balasubramanian, 2002). Retailers may adjust their ordering quantity based on market conditions and the availability of products from different manufacturers. They may prioritize ordering from manufacturers with advantages in production capacity and wholesale price (Tang and Dong, 2014). In our study, Retail orders refer to orders from foreign retail companies who serve as the middlemen in distributing ABC company's apparel products to final consumers in foreign countries. The main customer base of ABC company is the European region.

Retail orders may adversely be affected due to retail supply chain risk that arises due to uncertainty in situations and events such as variability in demand, supplier trust, product quality, storage capacities, and even economic crisis and natural disasters (Bahroun & Harbi, 2015).

2.4 Price Fluctuations

The upward and downward shift in a good or service's price over time is known as price fluctuation. It is a frequent occurrence in markets and can be brought on by a number of things, such as fluctuations in production costs, government regulations, supplier supply and demand, retailer or customer demand, and speculation (Fang & Shou, 2015). Since retailers mostly source from dependable domestic suppliers when there is a high likelihood of disruption, the supply of such retailers to the end market is largely unaffected even in the event of a disruption. As a result, the retailer somewhat modifies the disruption prices. When a merchant has a smaller market potential, the aforementioned issue is more prevalent (Yu,Zeng, & Zhao, 2009).

At ABC company, the inventory cost and logistics costs play a vital role in determining the final price of ABC company’s apparel products and the resulting fluctuations in prices since inventory cost can significantly impact a company's financial performance, particularly in industries like textiles where inventory represents a substantial portion of total assets; whereas logistic costs are the costs incurred when delivering the products from the point of origin to the point of consumption. Logistics are based on the size of the business since large companies which have larger volumes of production and reduced cost per unit seek cheaper logistical expenses (Tongzon, 2007).

2.5 Global Price Competitiveness

The geography of apparel manufacturing and trade has undergone considerable change as a result of the removal of global textile quotas with the expiration of the 30-year-old Multi-Fiber Arrangement (MFA) and buyers' freedom to source any quantity of clothing from any nation (subject only to a system of tariffs and safeguard measures). Firms and policymakers argue that the end of quotas is already defining winners and losers, and that adjustment will likely be difficult, uncertain, and painful for many in the short term. They point to the price deflation already experienced by apparel suppliers following the removal of quotas in January 2005, as well as the growing consolidation among global buyers and retailers and the early tide of withdrawal of foreign direct investment in textiles and apparel from many small countries (such as Mauritius, Lesotho, and Madagascar among others). There is a general belief that, as nations look for methods to compete in this unstable climate factors such as pricing, unit costs, and volume will likely be more important in determining an apparel company's ability to compete globally than they were before restrictions were removed (Appelbaum, 2008). Since pricing is an important factor to compete globally, ABC company needs to consider the prices of other competing countries which offer the same type of apparel to the same market destination as customers are price sensitive (Low et al., 2013).

2.6 Capacity

An organization's capacity relates to its capacity to create a specific number of goods in a predetermined amount of time. This encompasses elements like resource allocation, production efficiency, and manufacturing skills. The infrastructure, technology, labor force, and general operational effectiveness of the company all affect capacity. By managing capacity effectively, a company may meet market demand without sacrificing timely delivery and high-quality products (Kleindorfer and Saad

2005). Physical and human resources are included in the organization's capabilities within the garment sector. The physical component includes the factories, machinery, and technology used in the production process. To increase total productivity, this entails assessing the effectiveness of manufacturing lines, reducing downtime, and making investments in cutting-edge machinery.

Furthermore, Flexibility in the capacity of the manufacturing systems is useful to enable an organization to make reversible and cost-effective adjustments to the capacity of the manufacturing in according to changes in demand for products through optimizing the utilization of manufacturing, human, and material resources (Holtewert & Bauernhansl, 2016). Hence capacity and flexibility of capacity in the manufacturing facility are important in avoiding production delays, fulfilling the demand of retailers, and ensuring a strong supplier-buyer relationship in response to the dynamic market conditions.

3. Research Methodology

The methodology used in research has a direct influence on the entire process of research from the theoretical framework, data collection, and analysis process to interpretation of findings. Therefore, the researcher needs to carefully consider the research method to be used in research as it has a critical significance in obtaining accurate and reliable results.

In general, according to the types of information sought, two main research methodologies are commonly used in studies to obtain and ensure the validity and reliability of information. These methodologies are qualitative research methodology and quantitative research methodology respectively (Sukamolson, 2007). However, according to the content and structure of the research, some researchers may use these two methods together which is known as the mixed method. Qualitative research methodology is concerned with exploring the occurrence of events, incidents, and circumstances 'from the interior' and accounts for the perspectives of research participants as a starting point. Qualitative research encompasses collective features such as aims and objectives that are guided at providing an in-depth understanding of the experiences, social and material circumstances, and perspectives of research participants, Openness to emergent categories and theories at the analysis and interpretation stage, the use of non-standardized adaptable methods of data generation for the context of the study which can be adapted for the case or individual participant to allow the exploration of emergent issues and finally outputs that incorporate detailed descriptions about the phenomena which are being researched while taking into account the response of perspectives of the research participants. On the other hand, according to Creswell (1994), quantitative research has been defined as a type of research which explains the occurrence of events and circumstances by gathering numerical data that are being analyzed using mathematically based methods. From identifying the factors causing supply chain disruptions to addressing the research problem, similar studies have adopted a qualitative methodology (Bruce et al., 2004; Butt et al., 2022; Chowdhury & Quaddus, 2016; Islam, 2018; Milewska, 2022; Paul et al., 2021; Türker & Altuntaş, 2014). Therefore, a qualitative methodology to research will be followed in the current study.

Moreover, two types of research approaches are prominently used in research. These two approaches are deductive research and inductive research respectively (Hillebrand & Berg, 1990;

Quaddus & Xu, 2005). Deductive research starts with an existing theory or a predetermined hypothesis followed by gathering and evaluating data to confirm or refute them. In contrast, inductive research aims to build theories based on the systematic collection and analysis of specific observations and data collected (Azungah, 2018). Since, the current study attempts to identify and analyze the impact of supply chain disruptions on foreign retail orders for an apparel company situated in Sri Lanka, an inductive approach can help in identifying factors that cause supply chain disruptions while assessing the extent to which it has affected the company. Also, inductive research would assist in identifying patterns from the empirical data collected and thus would assist in gaining broader insights and formulating strategies to effectively manage supply chain disruptions and to mitigate the negative effects it has on the company and its retail orders. Therefore, the current study follows an inductive research approach.

4. Analysis and Discussion of Findings

4.1 Analysis

4.1.1 Profile of the Participants

The interviews were conducted as on-site interviews at the manufacturing facility of the factory, at departmental offices, and through telephone calls and WhatsApp calls. Interviews were conducted in both English language and Sinhala language where most of them were conducted in Sinhala language as most of the interviewees were not familiar with English language. The sample consisted of 8 lower-level and middle-level managers of the company who have a vast knowledge of the company's operations and the context in which the company is operating. Each interview lasted approximately between 20 minutes to 50 minutes and it was mainly due to the differences in knowledge ability of the participants. The participants were selected mainly through friendship network.

Table 1

Profile of the participants

Name	**Designation**	**Code**
Sureka	Stores team leader	I24
Kasun	Warehouse team leader	I27
Thilina	Production supervisor	I30
Gayani	Production team leader	I33
Imad	Quality supervisor	I36
Isuru	Finance executive	I39

Amali	HR executive	I42
Pathum	Production executive	I45

Note. Developed by author

4.1.2 Coding

Thematic analysis was adopted to analyze the collected data because it allows interpret the meaning of the data and assists in discovering patterns from available data. (Braun & Clarke, 2006) Data was collected through interviews conducted on-site interviews at the manufacturing facility of the factory, at departmental offices, and through telephone calls and WhatsApp calls due to the fact that it was considered as the most suited way to connect with the participants given the context of the company. As self-initiated expatriates are not well-educated and not fluent in the English language those interviews were conducted by Sinhala language and then translated into English language. After carefully converting the audio content into written form, the transcripts were created. Once the transcripts were created, it was read through that several times in order to grab the view of the participants' emotions, experiences, challenges and how they changed their behavior accordingly to adapt to the new environmental setting.

After analyzing the information presented in the transcript, key findings were included by quoted actual words of the participants that were being used during the interviews and was supported to present data as it relates to the themes generated in this study. Accordingly, by identifying patterns, exploring common phenomenon and nuances, 5 core themes such as,

- Supply Chain Disruptions
- Production Challengers
- Changes in Consumption Patterns
- Inter- Business Relationships and Employee Engagement
- Revenue Realization were emerged.

4.2. Discussion of Findings

4.2.1 Supply chain disruptions

A supply chain disruption refers to any event or circumstance that interrupts or prevents the smooth flow of goods, services, information, or finances within a supply chain network. Both volatility in cost of production and global competitiveness could significantly affect to cause supply chain disruptions in a company. Furthermore, according to Gayani, M. and Shanika, D, (2015) the cost of production in the apparel industry can be influenced by various factors such as raw material costs, labor costs, overhead expenses, and wastage. In the context of the Sri Lankan apparel industry, the cost of fabric is highlighted as a significant factor affecting production costs. Fabric costs can typically account for a substantial portion of the selling price of a garment, ranging from 35% to 40%. Therefore, controlling fabric costs and minimizing wastage, such as through reducing raw material write off, can have a direct impact on the overall cost of production.

Additionally, factors such as excess ordering of raw materials, excess receipt of materials, and yield per yardage saving (YY saving) can also contribute to the cost of production through inefficiencies and wastage. By identifying and addressing these factors, apparel manufacturers can work towards optimizing their production processes, reducing costs, and improving overall profitability.

"It was not an easy task to manage stock shortage issues because, because of that, workers spent their time leisurely. Stock shortages led to disruptions, which made it difficult to maintain optimal stock levels." (I24)

"Supply chain disruptions badly affected our inventory management practices by causing irregularities in stock availability, delayed deliveries, and increased lead times. These disruptions caused imbalances in our inventory levels, excess stock of certain items, and shortages of critical materials, leading to operational inefficiencies and increased carrying costs." (I27)

"… continuous rise in raw material prices added to production costs, potentially leading to higher retail prices for our apparel products." (I36)

However, it is also mentioned that ABC Company (Pvt) Ltd has executed an important action known as the 'Cut to ship' method to ensure that there is minimum wastage with regards to cutting fabric to manufacture garments. This step is very crucial for ABC Company (Pvt) Ltd as it helps to minimize the overall cost of production.

Apart from that, the impact of global competition also has an influence on supply chain disruptions where according to Yuke and Joe (2020) in response to heightened global competition, apparel manufacturers have sought to differentiate themselves and capture larger portions of the value chain through upgrading strategies such as product, process, and supply chain upgrading. These strategies involve improving product quality, enhancing production processes, and optimizing supply chain operations to remain competitive in the global marketplace.

"We faced challenges in sourcing high-quality raw materials due to supply chain disruptions caused by the pandemic, geopolitical factors, and increased competition." (I36)

4.2.2 Production Challenges

Production challenges refer to various obstacles, difficulties, or issues that companies face in manufacturing or producing goods and services efficiently and effectively. These challenges can arise at different stages of the production process and may involve aspects such as resource management, technology utilization, workforce capabilities, supply chain complexities, regulatory compliance, and market dynamics.

Capacity can be considered to be an element that directly impacts a company's ability to meet production demands efficiently. According to Xiaobo and Sivalogathasan.V (2013) capacity is the ability of an organization to effectively utilize its intellectual capital to drive innovation capability and enhance organizational performance where its main determinants are human capital, organizational capital and social capital. Insufficient capacity can lead to bottlenecks, delays, and increased lead times, affecting customer satisfaction and overall performance as well as having the right capacity allows a company to be more flexible and responsive to changes in demand or market conditions. It enables quick adjustments to production levels, product mix, and delivery schedules, enhancing overall performance.

"The COVID-19 pandemic disrupted global supply chains, causing shortages of critical raw materials, components, and machinery, which hampered our production schedules and capacity utilization." (I45)

4.2.3 Changes in Consumption Patterns

According to Katarina; et.al (2021) changes in consumption patterns as the alterations in consumer behavior related to shopping habits, purchasing preferences, and financial decisions brought about by the COVID-19 pandemic. These changes include shifts in spending priorities, adjustments in shopping frequency, modifications in product choices based on availability, and a focus on essential purchases such as health, hygiene, and food. Additionally, changes in consumption patterns encompass the impact of income fluctuations, savings behavior, and the adoption of new shopping habits influenced by age, income level, and occupation sector.

"…the main challenge we faced in the pandemic situation and the Russian-Ukraine war was a decrease in retail orders. In the pandemic situation, several nations enforced lockdowns and travel restrictions, which resulted in business closures and an increase in online shopping. The above-mentioned problem impacted our regular retail channels." (I39)

"During the pandemic situation, our buyers spent more time checking whether their materials were of good quality or not because they knew that because of the pandemic, all suppliers changed, and there was a risk of receiving defective materials. A thorough inspection of materials and adjustments in the production process due to these new suppliers led to delays in production schedules." (I36)

4.2.4 Inter- Business Relationships and Employee Engagement

As ABC company is an organization which engages in the process of both upstream supply chain and downstream supply chain, it is essential for them to build a strong and effective relationship with its raw material suppliers when they are involved as a buyer of raw materials in order to manufacture apparel products and wholesalers when they are involved as a supplier of apparel products after having manufactured the apparel products. In addition, it is essential for the employees within the organization to engage and have effective communication within the organization and beyond the organization.

An appropriate and effective application of supplier-manufacturer relationship can bring significant value to the manufacturer's performance, especially in terms of cost reduction and gaining constant improvements in quality levels while upgrading their product designs (Monczka et al., 1993; Primo & Amundson, 2001). In order to gain these benefits, experts, and professionals in the industry have identified the importance for an organization to work with its suppliers in what are commonly referred to as 'partnerships' (Lemke et al., 2003). Furthermore, although previously the manufacturers' focus was primarily on cost, quality, and delivery in the context of relationships with suppliers, later wider range of factors such as competency of suppliers, the overall service offered, and suppliers' organizational culture was also taken into account (Goffin et al., 1997; O'Toole & Donaldson, 2002). Therefore, it is of utmost importance for an organization to cooperate with its suppliers to gain the benefits mentioned above and to create significant value for the organization (Carr & Pearson, 1999; Monczka et al., 1993). Relationships among manufacturers and their suppliers are typically referred to as "supplier-manufacturer relationships" (Goffin et al., 2005). It is essential for ABC company to maintain a strong positive relationship with its suppliers by understanding them and building trust since they play a pivotal role in catering the fluctuating demand of ABC company's retail orders. Although these relationships with raw material suppliers may have an intensive and familiar contact, the ultimate aim to process the given orders through maintaining formal, impersonal and superficial supplier- manufacturer relationship. Therefore, many participants highlighted the fact that they collaborate with suppliers to achieve the role expected from their position and to achieve the company objectives.

"I collaborate closely with raw material producers to stay updated on market trends, pricing dynamics, and product innovations to offer competitive and appealing merchandise to our customers." (I24)

"As the Quality Supervisor, my role in managing relationships with both raw material producers and retailers within the supply chain is crucial for ensuring product integrity and customer satisfaction. I work closely with raw material producers to establish stringent quality standards, conduct quality audits, and implement quality control measures throughout the production process. This includes supplier qualification assessments, product testing, and continuous improvement initiatives to address any quality issues promptly" (I36)

"As the HR Executive, my role in managing relationships with both raw material producers and retailers within the supply chain emphasizes talent management, collaboration, and organizational development. I work closely with raw material producers to identify talent needs, provide training and development opportunities, and foster a culture of continuous improvement and teamwork. This includes workforce planning, performance management, and employee engagement initiatives to support business objectives and strengthen relationships with suppliers." (I42)

In terms of Inter-Business relationships, an effective manufacturer-retailer relationship is also important for an organization which also engages in downstream supply chain where manufacturers and retailers collaborate within a network thereby influencing the business processes. With respect to the manufacturer, the relationship between manufacturers and retailers involves the capability of manufacturers to push products to retailers based on forecasting where the retailers are being influenced by manufacturers in the supply chain strategy. In other words, the power of manufacturers in a manufacturer-retailer relationship lies in the extent to which the retailers are dependent upon the manufacturers where retailers find difficulty in perceiving to switch to alternative sources of supply (Frazier, 1999; Lennerts et al., 2016; Lestari et al., 2020). Furthermore, Trustworthiness plays a crucial part in a manufacturer-retailer relationship as it is a deciding element for both the manufacturers and retailers to realize their full potential. In fact when both the parties trust each other, they are able to share confidential information, customize their information systems and dedicate people and resources to serve each other (Kumar, 1996). At ABC company, the extent and strength of the relationship with retailers is a deciding factor in ensuring their sustainability within the apparel industry, especially at times of disruptive situations caused by geopolitical circumstances and unexpected macroenvironmental changes. The participants mentioned that they collaborate with retailers in order to ensure that their demands are met and emphasized the importance of assurance, understandability and trustworthiness in their relationship with retailers.

"I try my best to support a skilled and motivated workforce as the engagements that our employees have with our retailers and their interactions with retailers can significantly impact our business relationships." (I42)

"My role in managing relationships with retailers within the supply chain focuses on fostering strong partnerships based on mutual trust, transparency, and collaboration. This involves understanding retailers' needs, preferences, and market demands to curate product assortments, pricing strategies, and promotional activities that resonate with their target customers." (I45)

"We collaborate with retailers by understanding their sales trends, analyzing customer preferences, and adjusting merchandise assortments accordingly. This helps optimize stock levels, reduce stockouts, and ensure that retailers have the right products available to meet customer demand." (I24)

"I collaborate with retailers by optimizing inventory management, sharing real-time inventory data, and coordinating logistics to meet delivery timelines. This ensures efficient handling and storage of finished goods, enabling timely and accurate deliveries to retailers." (I27)

"We also collaborate with some of our main retailers to track inventory turnover rates. Identify slow-moving items, and prioritize restocking high-demand products." (I27)

"We collaborate with retailers by negotiating pricing terms, managing payment schedules, and offering flexible financial solutions to meet their budgetary requirements. This fosters strong partnerships, improves cash flow, and ensures smooth transactions between ABC Company and retailers." (I39)

It is also mentioned that in order to increase the ratings of the company, the company will always strive to provide assurance to retailers at all times relating to fulfilling the orders of retailers.

"Whatever the disruption which may come on our way in the supply chain, we always try our best to provide assurance to our retailers that we will deliver the order on time. This is done in order to increase the ratings of our company and to increase the trustworthiness we have with our retailers." (I45)

Furthermore, employee engagement plays a vital role in determining the company's ability to respond to subtle changes and unexpected changes of the business environment. It is defined as a positive psychological state of an employee characterized by a genuine willingness to contribute towards the organization's success. An engaged employee is aware of the context in which the business is operating in and hence works together with colleagues for the betterment of the organization (Albrecht, 2010; Bakker & Leiter, 2010; Robinson et al., 2004; Welch, 2011). According to what many of the participants mentioned, it could be understood that engagement of employees within the organization has an influence and effect on the organization's ability to deal with raw material suppliers and apparel retailers in the industry.

"I try my best to support a skilled and motivated workforce as the engagements that our employees have with our retailers and their interactions with retailers can significantly impact our business relationships." (I42)

In addition, the importance of training and development were also highlighted to foster a culture of teamwork and continuous improvement apart from adapting to changes.

"We have been providing training courses on problem-solving and adaptability techniques. This has enabled staff members to come up with innovative ideas and adapt to changes." (I42)

4.2.5 Revenue Realization

The above core theme focuses upon the realization of revenue and cash flow after the effect of considering fluctuations in prices of the apparel products that ABC company has sold and the payment policies that ABC company follow when receiving payments.

Due to the volatile nature of costs, currency exchange fluctuations, and custom duties that mainly affect an organization when there is uncertainty present in the market, it is critical for an organization to develop and implement proactive cost optimization strategies to safeguard its profit margins and adjust pricing structures accordingly. Therefore, effective pricing strategies are essential for an organization to adapt to volatile conditions in the market and maintain competitiveness as an organization operating at the global level (Betts & Devereux, 2000; Gupta et al., 2021; Mandel et al., 2015). In this regard, ABC company had to negotiate for flexible contracts with raw material suppliers in order to mitigate price fluctuations. Also, participants mentioned that in relation to retailers, they had to ensure that company achieves the desired financial performance by optimizing pricing strategies and analyzing profitability.

"…to stay updated on market trends, pricing dynamics, and product innovations to offer competitive and appealing merchandise to our customers." (I24)

"…negotiated flexible contracts to mitigate price fluctuations, and optimized warehouse layouts for efficient storage and retrieval, ensuring timely availability of inventory to support production and meet customer demands effectively." (I27)

ABC company also followed the strategy of switching to alternative suppliers at situations where the prices of their present suppliers were increasing. This was also done to maintain their selling price of apparel products to retailers since the impact of prices of raw material suppliers had a direct impact on selling prices of apparel products.

"Suppliers increased their prices a lot, and because of these higher prices without relying on the same supplier, the company, with the consent of their retailers, switched to other suppliers." (I45)

It is also mentioned that geopolitical events adversely affected the local currency of the company apart from the increased custom duties which in turn will again result in affecting the price dynamics of apparels and hence ultimately affecting in realizing the revenue.

"Secondly, geopolitical factors such as civil wars in Europe disrupted trade routes and logistics, leading to higher transportation costs, customs duties, and currency exchange fluctuations." (I39)

In addition, Payment polices in an organization is also an important determinant in realizing the revenue. Payment policies can be explained as the practices that an organization follows with regard to the management of trade credit and includes rules and guidelines that govern how consumers can make their payment choices. These policies may include prompt payment incentives, and limiting credit provisions to mitigate the risks of bad debts (Pike & Cheng, 2001; Stavins, 2017). In terms of ABC company, their policies involve and revolve around the fact of having had to face and handle the issues relating to making the payments to raw material suppliers following late material deliveries. Also, ABC company collaborates with retailers in understanding their circumstances and manage payment schedules accordingly to offer them flexibility in making the payment.

"Delays in receiving raw materials or finished goods result in cash flow issues due to inventory carrying costs and potential payment delays to suppliers." (I39)

"We collaborate with retailers by negotiating pricing terms, managing payment schedules, and offering flexible financial solutions to meet their budgetary requirements." (I39)

5. Conclusion

In recent years, ABC Company, an apparel manufacturer, has seen a notable decline in retail orders from the European market due to a combination of global and regional challenges. The COVID-19 pandemic severely disrupted their supply chain, causing production delays, transportation issues, and increased costs. The company also struggled to adapt to the rapid shift toward e-commerce, losing ground to more agile competitors like Bangladesh and Vietnam. Civil unrest in parts of Europe created market uncertainty, discouraging retailers from placing new orders and complicating logistics. Economic instability in the region further reduced consumer spending on non-essential items like apparel, while fluctuating exchange rates affected ABC's pricing and profit margins. Additionally, intensified global competition from lower-cost producers has placed further pressure on ABC Company's competitiveness. These combined factors have weakened the company's market position and made it difficult to maintain consistent retail demand. Hence, the following recommendations could be given to ABC Company.

5.1. Recommendations

5.1.1 Expand market internationalization to South Asian countries

Although ABC company manufactures and exports its apparel products to foreign retailers, these retailers are mainly from European countries. Hence due to the effect of global price competition and the Russia-Ukraine war, there is a decline in global sales of ABC company. However, nothing has been said by the participants with regards to selling their garment products to neighbor countries. Therefore, it is recommended for ABC company to find retailers of other countries to sell their products, especially countries located close by such as India, Maldives, Nepal and Pakistan through Intra-regional trade. It is because although South Asia is a major apparel and textile exporter, countries in the region certainly import fabric and apparel for the purpose of fulfilling the domestic demand or due to the fact that these countries do not manufacture all apparel products themselves (Adhikari & Weeratunge, 2007). If implemented, this strategy would be successful to a great extent, especially due to the presence and support of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) which is a regional organization aimed to promote technical and economic cooperation among countries situated around the Bay of Bengal (De & Chirathivat, 2019). As a result of exporting products to countries located close by, ABC company not only would be able to minimize their transportation and shipping costs, but also will be able to sell its products at a lower price while maintaining the same margins of its products.

5.1.2 Implement advanced inventory management systems

According to Panigrahi et al. (2019) inventory management is viewed to be the most important function in each manufacturing firm. In the context of ABC Company, better inventory management becomes crucial in facing issues resulting from supply chain disruptions. Hence it is essential to update the existing inventory management systems and have an advanced inventory management system within the company. For instance, the company can introduce sophisticated inventory management software that uses real-time data analytics and algorithms to predict the demand more accurately and optimize inventory levels. Apart from that, following the approach of Just-In-Time (JIT) inventory practices to minimize excess stock and reduce carrying costs would also be particularly useful to ensure materials are ordered and received just in time for production, reducing the risk of overstocking and wastage (Cajal-Grossi et al., 2023). However, ABC Company needs to conduct a feasibility study on the effectiveness of implementing JIT system as there were delays in sourcing fabrics from foreign raw material suppliers in the past. In addition, it is also recommended to maintain a safety stock of inventory by ABC Company which serves as a buffer of extra inventory to protect against uncertainties in demand and supply. Hence the ultimate objective of suggesting to implement advanced inventory management system is to reduce stock shortages and excess inventory, ensuring optimal stock levels and minimizing inefficiencies.

5.1.3 Evaluation and enhancement of collaboration with key stakeholders

With the insights provided by participants, it can be observed that ABC company has already being made efforts to build a strong and effective relationship while attempting to work collaboratively with both its raw material suppliers and foreign retailers apart from supporting and ensuring that the employees of the organization and involved in the work process.

Therefore, in terms of its relationship with suppliers, it is recommended for ABC company to regularly assess the impact of collaborations with its suppliers by utilizing key performance indicators to quantify benefits in terms of cost savings, efficiency gains and identify areas where collaborations are most effective. Also, in terms of dealing with its retailers, key performance indicators in the areas of cost savings and efficiency improvements can be followed in evaluating and assessing the impact of effective collaboration (Bhatti et al., 2013). Furthermore, employees at ABC company play a major role as a type of key internal stakeholder by coordinating with teams to adjust schedules and trying to maintain smooth operations of the manufacturing operations while providing training opportunities, and fostering a culture of collaboration and innovation across the organization. Therefore, the effectiveness of these activities should be monitored and assessed through feedback mechanisms such as performance appraisals, 360-degree feedback and surveys.

Hence, afterwards, there should be improvements or updates made in the company's systems to address shortcomings or drawbacks in the context of collaborating with its suppliers, retailers and coordinating with its employees.

5.1.4 Form fixed price contracts with both its suppliers and retailers

Another way of securing revenue of ABC company's apparel products is to have fixed price contracts, preferably contracts which last for more than one year with its retailers and suppliers. These contracts provide stability in pricing over long periods of time ensuring predictability for the parties involved (Lafontaine & Slade, 2013). Also, these contracts will serve as a buffer against the global price competitiveness posed by global competitors, particularly Bangladesh and against both market fluctuations in costs and currency exchange rates ensuring that both retailers and suppliers of ABC company have a clear understanding of pricing and payment expectations. Hence, by following this strategy ABC company will be able to mitigate the fluctuations or increase in cost of sourcing from its suppliers while being able to stabilize their revenue stream by dealing with retailers.

5.1.5 Improve supply chain transparency

Supply chain transparency is considered to be an important way that voluntary supply chain commitments could be put into action. These efforts can be in the forms of codes of conduct and ethical sourcing standards. Most organizations are unwilling to voluntarily assume responsibility, hence supply chain transparency can assume and ensure responsibility for supply chain sustainability by making it a tool that makes powerful actors such corporations and key stakeholders accountable (Dingwerth & Eichinger, 2010; Doorey, 2011; Egels-Zandén et al., 2015; Laudal, 2010). In terms of improving the transparency of the supply chain, ABC company should focus on the area of enhancing the visibility of the supply chain. This can be achieved by implementing blockchain technology which is an advanced database mechanism that allows transparent information sharing within a business network, and Internet of Things (IoT) since it assists in providing real time data on tracking and monitoring of goods from suppliers to the company (Pal & Yasar, 2020). Radio Frequency Identification (RFID) tags which are tags used for tracking garments and materials throughout the supply chain, and having smart shelves which are equipped with sensors to detect the presence and quantity of goods are a few of IoT's which will be particularly useful for an apparel company operating under uncertainty like ABC company.

Apart from that, it is crucial for ABC company to establish a comprehensive supply chain risk management plan which includes risk assessment, contingency planning, and protocols related to crisis management which would pave the path for proactive problem solving and contingency planning to mitigate supply chain risks and maintain the fulfillment of orders.

5.2 Limitations and Avenues for Future Research

Although the current study assesses the impact of supply chain disruptions its effects on retail orders for ABC company and presents context-specific, insightful findings that deeply reflect the experiences and perceptions of those interviewed, the solutions found through this study cannot be generalized or applied to other contexts or other companies since the study is done based on interviews with only eight employees of only one company. Hence, the small, purposively selected sample limits the generalizability of results. Also, the organization has a unique culture where they follow different strategies in sourcing raw materials which might be different to the sourcing strategies practiced by other companies of different industries. Apart from sourcing, their other supply chain practices also possess a certain uniqueness which might be different to the supply chain practices of other companies operating in the same apparel industry. Furthermore, ABC company is also relatively new to the industry, and it might have a lower customer base compared to that of other large companies operating in the industry which once again hinders the possibility of applying the information and insights gained through the study to other companies operating in the industry. For broader applicability, future research should be done by involving multiple companies operating in the apparel industry.

Furthermore, the answers provided by each interviewee are often based on interpretations, perceptions and personal experiences which are subjective from individual to individual. For instance, the answers they provided might also depend on the way the questions are asked by interviewer from the interviewees who were involved in the research.

In conclusion, ABC Company's significant decline in retail orders within the European market can be attributed to a combination of external and internal challenges. The COVID-19 pandemic disrupted global supply chains and shifted consumer behavior towards online shopping, straining the company's traditional operations. Civil unrest in parts of Europe created market uncertainty, leading to cautious spending and inventory stocking among retailers. Financial instability across the continent further reduced consumer purchasing power and complicated pricing strategies due to fluctuating exchange rates. Lastly, increased global competition from low-cost producers and fast fashion brands intensified market pressures, making it difficult for ABC Company to maintain its market share.

Addressing these multifaceted challenges requires a strategic approach. ABC Company needs to enhance its digital presence to capitalize on the e-commerce boom, diversify its supply chain to mitigate disruptions, and adapt to changing consumer preferences. Additionally, the company should explore new markets to reduce dependency on volatile regions and invest in innovation to differentiate itself from competitors. By implementing these strategies, ABC Company can stabilize its operations and work towards regaining its position in the European market.

References

Adhikari, R., & Weeratunge, C. (2007). Textiles and clothing in South Asia. *South Asia Economic Journal*, *8*(2), 171–203. https://doi.org/10.1177/139156140700800201

Ahsan, K., & Azeem, A. (2010). Insights of apparel supply chain operations: a case study. *International Journal of Integrated Supply Management*, *5*(4), 322. https://doi.org/10.1504/ijism.2010.035759

Akamp, M., & Müller, M. (2013). Supplier management in developing countries. *Journal of Cleaner Production*, *56*, 54–62. https://doi.org/10.1016/j.jclepro.2011.11.069

Albrecht, L. S. (2010). *Handbook of Employee Engagement: Perspectives, issues, research and practice*. https://doi.org/10.4337/9781849806374

Annelies, M. (2013, January 1). *Managing global guilt and local norms: Governance in the Sri Lankan clothing industry*. Carolina Digital Repository. https://doi.org/10.17615/43ef-x654

Appelbaum, R. P. (2008). Giant Transnational contractors in East Asia: Emergent trends in global supply chains. *Competition & Change*, *12*(1), 69–87. https://doi.org/10.1179/102452908x264539

Arlbjørn, J. S., & Rajkumar, C. (2018). Balancing theoretical and practical relevance in supply chain management research. *International Journal of Physical Distribution & Logistics Management*, *48*(5), 504–523. https://doi.org/10.1108/ijpdlm-01-2018-0020

Azungah, T. (2018). Qualitative research: deductive and inductive approaches to data analysis. *Qualitative Research Journal*, *18*(4), 383–400. https://doi.org/10.1108/qrj-d-18-00035

Bahroun, M., & Harbi, S. (2015). Risk management in the modern retail supply chain: Lessons from a case study and literature review. *IEEE Conference Publication: IEEE Xplore.* https://doi.org/10.1109/iesm.2015.7380300

Bakker, A., & Leiter, M. (2010). Work Engagement. https://doi.org/10.4324/9780203853047

Betts, C., & Devereux, M. B. (2000). Exchange rate dynamics in a model of pricing-to-market. *Journal of International Economics*, *50*(1), 215–244. https://doi.org/10.1016/s0022-1996(98)00036-1

Bhagya, B., Wijesuriya, M., & Weerasekara, S. (2022). Managing Supply to Meet the Global Demand for Coconut-based Products at ABC (Private) Limited. *The Journal of Business Studies*, *6*(2), 87–98. https://www.fcm.esn.ac.lk/jbs/archive/6.2.7.pdf

Bhatti, M. I., Awan, H. M., & Razaq, Z. (2013). The key performance indicators (KPIs) and their impact on overall organizational performance. *Quality and Quantity*, *48*(6), 3127–3143. https://doi.org/10.1007/s11135-013-9945-y

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, *18*(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A Practical Guide for Beginners*. SAGE.

Braun, V., & Clarke, V. (2012). Thematic analysis. In *American Psychological Association eBooks* (pp. 57–71). https://doi.org/10.1037/13620-004

Clarke, V., & Braun, V. (2014). Thematic analysis. In *Springer eBooks* (pp. 1947–1952). https://doi.org/10.1007/978-1-4614-5583-7_311

Bruce, M., Daly, L., & Towers, N. (2004). Lean or agile: A solution for supply chain management in the textiles and clothing industry? *International Journal of Operations & Production Management*, *24*(2), 151–170. https://doi.org/10.1108/01443570410514867

Butt, A. S., Alghababsheh, M., Arshi, T., & Shah, S. H. H. (2022). Strategies to streamline supplier relationship management during crises: lessons learned from COVID-19 and future pathways. *Benchmarking: An International Journal*, *30*(10), 3906–3924. https://doi.org/10.1108/bij-04-2022-0226

Cajal-Grossi, J., Del Prete, D., & Macchiavello, R. (2023). Supply chain disruptions and sourcing strategies. *International Journal of Industrial Organization*, *90*, 103004. https://doi.org/10.1016/j.ijindorg.2023.103004

Carr, A. S., & Pearson, J. (1999). Strategically managed buyer–supplier relationships and performance outcomes. *Journal of Operations Management*, *17*(5), 497–519. https://doi.org/10.1016/s0272-6963(99)00007-8

Chakraborty, S., & Biswas, M. C. (2020). Impact of COVID-19 on the textile, Apparel and fashion manufacturing industry supply chain: Case Study on a Ready-Made Garment Manufacturing industry. *Social Science Research Network*. https://doi.org/10.2139/ssrn.3762220

Chan, H. K., Wang, W. Y. C., Luong, L. H. S., & Chan, F. T. S. (2009). Flexibility and adaptability in Supply Chains: A lesson learnt from a practitioner. *Supply Chain Management: An International Journal*, *14*(6), 407–410. https://doi.org/10.1108/13598540910995165

Chowdhury, M. M. H., & Quaddus, M. (2016). Supply chain readiness, response and recovery for resilience. *Supply Chain Management*, *21*(6), 709–731. https://doi.org/10.1108/scm-12-2015-0463

Creswell, J. (1994). Research design: Qualitative & quantitative approaches. Sage Publications, Inc. https://doi.org/10.1108/13598540910995165

Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approach. Sage publications.

De, P., & Chirathivat, S. (2019). Strengthening BIMSTEC Integration: the new agenda. In *Routledge eBooks* (pp. 275–292). https://doi.org/10.4324/9781003005001-17

Dingwerth, K., & Eichinger, M. (2010). Tamed Transparency: How Information Disclosure under the Global Reporting Initiative Fails to Empower. *Global Environmental Politics*, *10*(3), 74–96. https://doi.org/10.1162/glep_a_00015

Doorey, D. J. (2011). The Transparent Supply Chain: from Resistance to Implementation at Nike and Levi-Strauss. *Journal of Business Ethics*, *103*(4), 587–603. https://doi.org/10.1007/s10551-011-0882-1

Egels-Zandén, N., Hulthén, K., & Wulff, G. (2015). Trade-offs in supply chain transparency: the case of Nudie Jeans Co. *Journal of Cleaner Production*, *107*, 95–104. https://doi.org/10.1016/j.jclepro.2014.04.074

Elliott, R. (2021). Supply Chain Resilience Report 2021. In https://www.thebci.org/static/e02a3e5f-82e5-4ff1-b8bc61de9657e9c8/BCI-0007h-Supply-Chain-Resilience-ReportLow-Singles.pdf.

Etikan, I. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Fang, Y., & Shou, B. (2015). Managing supply uncertainty under supply chain Cournot competition. *European Journal of Operational Research*, *243*(1), 156–176. https://doi.org/10.1016/j.ejor.2014.11.038

Fayezi, S., Zutshi, A., & O'Loughlin, A. (2014). Developing an analytical framework to assess the uncertainty and flexibility mismatches across the supply chain. *Business Process Management Journal*, *20*(3), 362–391. https://doi.org/10.1108/bpmj-10-2012-0111

Frazier, G. L. (1999). Organizing and managing channels of distribution. *Journal of the Academy of Marketing Science*, *27*(2), 226–240. https://doi.org/10.1177/0092070399272007

Gayani, M., & Shanika, D. (2015). Factors Affecting Raw Material Write Off: A Case Study of the Sri Lankan Apparel Industry. *International Journal of Management, Accounting and Economics,2*(7), 2383-2126.

Goffin, K., Lemke, F., & Szwejczewski, M. (2005). An exploratory study of 'close' supplier–manufacturer relationships. *Journal of Operations Management*, *24*(2), 189–209. https://doi.org/10.1016/j.jom.2005.05.003

Goffin, K., Szwejczewski, M., & New, C. C. (1997). Managing suppliers: when fewer can mean more. *International Journal of Physical Distribution & Logistics Management*, *27*(7), 422–436. https://doi.org/10.1108/09600039710188486

Grinin, L., & Korotayev, A. (2020). *COVID-19 PANDEMIC, GEOPOLITICS, AND RECESSION*. Grinin_Korotayev_Covid_Analysis20200607-23354-1ljwmdr-libre.pdf (d1wqtxts1xzle7.cloudfront.net)

Grossman, G. M., Helpman, E., & Lhuillier, H. (2021, October). *Supply Chain Resilience: Should policy promote diversification or reshoring?* National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w29330/w29330.pdf

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? *Field Methods*, *18*(1), 59–82. https://doi.org/10.1177/1525822x05279903

Gupta, D. K. (2003, September 2). *An analysis of the disruptions in the U.S apparel manufacturing industry and identification of continuity planning strategies*. https://repository.lib.ncsu.edu/items/d0ea33e3-55f2-4c00-aa89-458c91ea2f72

Gupta, V., Ivanov, D., & Choi, T. (2021). Competitive pricing of substitute products under supply disruption. *Omega*, *101*, 102279. https://doi.org/10.1016/j.omega.2020.102279

Hendricks, K. B., & Singhal, V. R. (2005). An empirical analysis of the effect of supply chain disruptions on Long-Run stock price performance and equity risk of the firm. *Production and Operations Management*, *14*(1), 35–52. https://doi.org/10.1111/j.1937-5956.2005.tb00008.x

Hillebrand, J. D., & Berg, B. L. (1990). Qualitative research methods for the Social Sciences. *Teaching Sociology*, *18*(4), 563. https://doi.org/10.2307/1317652

Holtewert, P., & Bauernhansl, T. (2016). Increase of capacity flexibility in manufacturing systems by substitution of product functions. *Procedia CIRP*, *57*, 92–97. https://doi.org/10.1016/j.procir.2016.11.017

Hussain, M., Al-Aomar, R., & Melhem, H. (2019). Assessment of lean-green practices on the sustainable performance of hotel supply chains. *International Journal of Contemporary Hospitality Management*, *31*(6), 2448–2467. https://doi.org/10.1108/ijchm-05-2018-0380

Islam, S. (2018). Supply chain management on apparel order Process: A case study in Bangladesh Garment industry. *www.academia.edu*. https://www.academia.edu/35748777/Supply_Chain_Management_on_Apparel_Order_Process_A_Case_Study_In_Bangladesh_Garment_Industry

Joe, Y. (2020). International Competition and Industrial Upgrading Strategies in the Global Apparel Industry.

Kleindorfer, P.R., and Saad, G.H. (2005). Managing disruption risks in supply chains. *Production & Operations Management, 14*(1), 53–68

Kottala, S. Y., & Kotzab, H. (2019). An empirical investigation of supply chain operations references model practices and supply chain performance. *International Journal of Productivity and Performance Management*, *69*(9), 1925–1954. https://doi.org/10.1108/ijppm-09-2018-0337

Kumar, N. (1996). *The power of trust in manufacturer-retailer relationships*. Harvard Business Review. https://hbr.org/1996/11/the-power-of-trust-in-manufacturer-retailer-relationships

Lafontaine, F., & Slade, M. E. (2013). 24. Inter-Firm contracts evidence. In *Princeton University Press eBooks* (pp. 958–1013). https://doi.org/10.1515/9781400845354-026

Laudal, T. (2010). An attempt to determine the CSR potential of the international clothing business. *Journal of Business Ethics*, *96*(1), 63–77. https://doi.org/10.1007/s10551-010-0449-6

Lee, H.L., Padmanabhan, V., Whang, S., 1997. The bullwhip effect in supply chains. *Sloan Manag. Rev. 38* (3), 93–102

Lemke, F., Goffin, K., & Szwejczewski, M. (2003). Investigating the meaning of supplier-manufacturer partnerships. *International Journal of Physical Distribution & Logistics Management*, *33*(1), 12–35. https://doi.org/10.1108/09600030310460981

Lennerts, S., Eisend, M., Lieven, T., Molner, S., Brexendorf, T. O., & Tomczak, T. (2016). The power of innovativeness in Manufacturer–Retailer relationships. *Journal of Business-to-business Marketing*, *23*(3), 235–251. https://doi.org/10.1080/1051712x.2016.1215745

Lestari, F., Kurniawan, R., Ismail, K., & Hamid, A. B. A. (2020). Supply chain relationship in a downstream sector. *Uncertain Supply Chain Management*, 423–438.https://doi.org/10.5267/j.uscm.2019.10.002

Lochmiller, C.R. (2021). 'Conducting Thematic Analysis with Qualitative Data,' *The Qualitative Report*. https://doi.org/10.46743/2160-3715/2021.5008

Low, W., Lee, J., & Cheng, S. (2013). The link between customer satisfaction and price sensitivity: An investigation of retailing industry in Taiwan. *Journal of Retailing and Consumer Services, 20*(1), 1–10. https://doi.org/10.1016/j.jretconser.2012.06.011

Malhotra, G. (2017). IJARND - *International Journal for Advance Research and Development. IJARnD.* https://www.ijarnd.com/manuscripts/v2i5/V2I5-1220.pdf

Mandel, A., Landini, S., Gallegati, M., & Gintis, H. (2015). Price dynamics, financial fragility and aggregate volatility. *Journal of Economic Dynamics & Control*, *51*, 257–277. https://doi.org/10.1016/j.jedc.2014.11.001

Masson, R., Purvis, L., MacKerron, G., & Fernie, J. (2007). Managing complexity in agile global fashion industry supply chains. *The International Journal of Logistics Management*, *18*(2), 238–254. https://doi.org/10.1108/09574090710816959

Milewska, B. (2022). The impact of instability in the business environment on the competitiveness of enterprises using the example of the apparel industry. *Sustainability, 14*(22), 14673. https://doi.org/10.3390/su142214673

Monczka, R. M., Trent, R. J., & Callahan, T. (1993). Supply base strategies to maximize supplier performance. *International Journal of Physical Distribution & Logistics Management, 23(*4), 42–54. https://doi.org/10.1108/09600039310041509

Monday, T.U. (2020) 'Impacts of Interview as research instrument of data collection in Social Sciences,' *Journal of Digital Art & Humanities*, *1*(1), pp. 15–24. https://doi.org/10.33847/2712-8148.1.1_2

Moosavi, J., Fathollahi-Fard, A. M., & Dulebenets, M. A. (2022). Supply chain disruption during the COVID-19 pandemic: Recognizing potential disruption management strategies. *International Journal of Disaster Risk Reduction*, *75*, 102983. https://doi.org/10.1016/j.ijdrr.2022.102983

Näslund, D., & Hulthén, H. (2012a). Supply chain management integration: a critical analysis. *Benchmarking: An International Journal*, *19*(4/5), 481–501. https://doi.org/10.1108/14635771211257963

O'Toole, T., & Donaldson, B. (2002). Relationship performance dimensions of buyer–supplier exchanges. *European Journal of Purchasing and Supply Management/European Journal of Purchasing & Supply Management*, *8*(4), 197–207. https://doi.org/10.1016/s0969-7012(02)00008-4

Pal, K., & Yasar, A. (2020). Internet of things and blockchain technology in apparel manufacturing supply chain data management. *Procedia Computer Science*, *170*, 450–457. https://doi.org/10.1016/j.procs.2020.03.088

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health*, *42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y

Panigrahi, R., Das, J., Tanty, G., & Jena, D. (2019). Advance Inventory Management Practices and Its Impact on Production Performance of Manufacturing Industry. *International Journal of Recent Technology and Engineering*, *8*(4), 3875–3880. https://doi.org/10.35940/ijrte.d8266.118419

Patton, M. Q. (1990). Qualitative evaluation and research methods. Thousand Oaks, CA: Sage Publications.

Paul, S. K., Chowdhury, P., Moktadir, M. A., & Lau, K. H. (2021). Supply chain recovery challenges in the wake of COVID-19 pandemic. *Journal of Business Research, 136,* 316–329. https://doi.org/10.1016/j.jbusres.2021.07.056

Peterson, R. A., & Balasubramanian, S. (2002). Retailing in the 21st century: reflections and prologue to research. *Journal of Retailing*, *78*(1), 9–16. https://doi.org/10.1016/s0022-4359(01)00062-8

Pike, R., & Cheng, N. S. (2001). Credit Management: An examination of policy choices, practices and late payment in UK companies. *Journal of Business Finance & Accounting*, *28*(7–8), 1013–1042. https://doi.org/10.1111/1468-5957.00403

Porter, M. E. (1985). Competitive strategy: Techniques for analyzing industries and competitors. Free Press.

Primo, M. a. M., & Amundson, S. D. (2001). An exploratory study of the effects of supplier relationships on new product development outcomes. *Journal of Operations Management, 20*(1), 33–52. https://doi.org/10.1016/s0272-6963(01)00080-8

Quaddus, M., & Xu, J. (2005). Adoption and diffusion of knowledge management systems: field studies of factors and variables. *Knowledge-Based Systems*, *18*(2–3), 107–115. https://doi.org/10.1016/j.knosys.2004.11.001

Robinson, D., Perryman, S., & Hayday, S. (2004). The drivers of employee engagement.

Robson, C. (2002). Real world research: A Resource for Social Scientists and Practitioner-Researchers. Wiley-Blackwell.

Saleheen, F., & Habib, M. M. (2022). Global Supply Chain Disruption Management Post COVID 19. *American Journal of Industrial and Business Management*, *12*(03), 376–389. https://doi.org/10.4236/ajibm.2022.123021

Sanil, H., Ramakrishnan, S., Alwethainani, M., & Siddique, M. (2016, January). *International Review of Management and Marketing*. Econjournal. https://www.econjournals.com/index.php/irmm/article/view/2484/pdf

Sarkar, S., & Kumar, S. (2015). A behavioral experiment on inventory management with supply chain disruption. *International Journal of Production Economics*, *169*, 169–178.

Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods for business students. Pearson Education.

Schell, C. (1992). The Value of the Case Study as a *Research Strategy*. http://www.psyking.net/HTMLobj3844/Value_of_Case_Study_as_a_Research_Strategy.pdf

Singh, A. (2022). IMPACT OF RUSSIAN - UKRAINIAN WAR ON THE ECONOMY OF SOUTH ASIA. *International Research Journal of Modernization in Engineering Technology and Science*, *04*(10). https://www.irjmets.com/uploadedfiles/paper/issue_10_october_2022/30454/final/fin_irjmets1665040190.pdf

Snyder, H. (2019) 'Literature review as a research methodology: An overview and guidelines,' *Journal of Business Research*, *104*, pp. 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Sukamolson, S. (2007). Fundamentals of Quantitative research. *Language Institute Chulalongkorn University*. https://www.researchgate.net/profile/Vihan-Moodi/post/What_are_the_characteristics_of_quantitative_research/attachment/5f3091d0ed60840001c62a27/AS%3A922776944787456%401597018576221/download/SuphatSukamolson.pdf

Tang Qi, Dong Hongyu, Study on supply chain inventory management performance evaluation of apparel enterprises. *Journal of Southeast University (Philosophy and Social Science), 2014,16(z1):*81-84.

Thahara, A. F., Rinosha, K. F., & Shifaniya, A. J. F. (2021). The relationship between exchange rate and trade balance: empirical evidence from Sri Lanka. *Journal of Asian Finance, Economics and Business*, *8*(5), 37–41. https://doi.org/10.13106/jafeb.2021.vol8.no5.0037

Tomlin, B., 2006. On the value of mitigation and contingency strategies for managing supply chain disruption risks. *Manag. Sci. 52* (5), 639–657.

Tongzon, J. (2007). The role of port performance in gateway logistics. In *Proceedings of the 1st International Conference on Gateways and Corridors.*

Türker, D., & Altuntaş, C. (2014). Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports. *European Management Journal*, *32*(5), 837–849. https://doi.org/10.1016/j.emj.2014.02.001

Valaskova, K., Durana, P., & Adamko, P. (2021). Changes in consumers' purchase patterns as a consequence of the COVID-19 pandemic. *Mathematics*, *9*(15), 1788. https://doi.org/10.3390/math9151788

Weekly Economic Indicators. (2022, May 13). Central Bank of Sri Lanka. https://www.cbsl.gov.lk/en/statistics/economic-indicators/weekly-indicators

Welch, M. (2011). The evolution of the employee engagement concept: communication implications. *Corporate Communications*, *16*(4), 328–346. https://doi.org/10.1108/13563281111186968

Wieteska, G. (2016). Building resilient relationships with suppliers in the B2B market. *Management*, *20*(2), 307–321. https://doi.org/10.1515/manment-2015-0067

Xiaobo, WU. & Sivalogathasan, V. (2013). Innovation Capability for better Performance: Intellectual Capital and Organization Performance of the Apparel Industry in Sri Lanka. *Journal of Advanced Management Science.1*(3).

Yin, R.K. (2003), Case Study Research: Design and Methods, Sage Publications, Thousand Oaks, CA.

Yu, H., Zeng, A. Z., & Zhao, L. (2009). Single or dual sourcing: decision-making in the presence of supply chain disruption risks. *Omega, 37*(4), 788–800

Exploring Supply Chain Resilience Strategies among Sri Lankan Internationalizing SMEs: A conceptualization

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Abstract

This study aims to explore the coping mechanisms Sri Lankan small and medium-sized enterprises (SMEs) use during their internationalization, particularly amidst global disruptions. As these SMEs become more involved in international markets, they encounter unique challenges that can profoundly affect their operational efficacy and competitive standing. Using a qualitative approach and an interpretive perspective, the study conducts in-depth interviews with managers and owners of SMEs expanding internationally to learn more about their tactics and experiences. Using thematic analysis to find important patterns and themes in the data clarifies that risk assessment, supplier diversification, technology investment, and utilizing special organizational resources are all good resilience methods.

The results of this study fill in gaps in earlier research that mainly concentrated on larger companies by expanding the understanding of supply chain resilience in the context of Sri Lankan internationalizing SMEs. By combining viewpoints on risk management, flexibility, technology, and entrepreneurial orientation, this study fills in the gaps left by earlier research that mostly concentrated on multinational corporations and advances our understanding of supply chain resilience in internationalizing SMEs. By examining how unique talents and strategic resource deployment improve resilience and global competitiveness, it broadens the scope of the Resource-Based View. Frameworks for risk reduction, flexible company culture, and ongoing development to enhance global supply chain operations are useful tips for Sri Lankan SME management.

Keywords: Supply chain resilience, internationalization, small and medium-sized enterprises (SMEs), disruptions

1. Introduction

1.1 Background of the study

Growing small and medium-sized businesses into foreign markets by utilizing strategies like exporting, partnerships, or establishing foreign subsidiaries to gain access to new markets and improve competitiveness is known as "internationalizing SMEs" (Santos-Paulino et al., 2023). Despite the rising focus, the literature on SME internationalization is mainly dispersed, emphasizing the need for further research on their unique advantages and disadvantages. (Yordanova et al., 2024).

According to Kiessling et al. (2024), because of their limited resources, SMEs face supply chain disruptions made worse by global uncertainties like COVID-19, geopolitical tensions, and environmental changes, which emphasizes the vital need for organizational resilience to quickly adapt, recover, and maintain international operations in the face of both resource constraints and the pressures of rapid export growth. Supply chains are the foundation of international trade in an increasingly interconnected world, but recent global uncertainties have tested their stability (Coşkun et al., 2023). SMEs, which frequently lack the resources of larger firms, must concentrate on creating resilient supply chains by encouraging cooperation, investing in strong partnerships, and proactively putting strategies like risk assessment and contingency planning into place to guarantee continuity, adaptability, and competitiveness (Johnson, 2025).

Yiğit Kazançoğlu et al. (2023) examine how outsourcing strategies, in particular, reshoring, to improve supply chain resilience by lowering interruptions, enhancing control, lowering risks, and encouraging flexibility in the ever-changing global business landscape. According to the study (Bandara et al., 2023), the supply chain resilience of Sri Lankan construction SMEs during the economic crisis is significantly enhanced by all four factors: collaboration, EO, internal integration, and outsourcing. SME exporters can effectively manage global supply chain disruptions by implementing buffering strategies to lessen reliance on foreign suppliers when situational control is high, bridging strategies to fortify relationships with supply chain partners when situational control is low, and mixed strategies when situational control is unclear (Hassan et al., 2024).

1.2 Research problem

Internationalizing small and medium-sized enterprises (SMEs) face significant challenges, particularly in managing supply chain disruptions. Research indicates that approximately 70% of SMEs encounter substantial supply chain issues when expanding into international markets (Madhavika et al., 2024). According to a survey, 60% of SMEs stated that a weak supply chain directly hampered their capacity to penetrate new markets (Singh et al., 2020). Given that SMEs with strong supply chain frameworks have a 50% higher chance of succeeding in international markets than those without, this emphasizes the crucial role that successful supply chain strategies play in internationalization (Bettiol et al., 2022). SMEs in Sri Lanka account for about 52% of the nation's GDP (EDB Sri Lanka, 2020). They also make up 45% of all jobs and more than 75% of all enterprises (Rathnasinghe, 2024). This demonstrates how important they are to the country's economic structure.

Supply chain resilience is essential for SMEs for several reasons. First, it improves flexibility, enabling SMEs to react quickly to unforeseen interruptions and guaranteeing business continuity (Pettit et al., 2013). Second, SMEs can maintain service levels and customer satisfaction, which are critical in cutthroat global marketplaces, thanks to robust supply chains, which boost competitiveness (Christopher et al., 2004). Furthermore, SMEs can lower potential losses by using efficient supply chain resilience techniques that help them manage the risks brought on by the complexity of global supply networks (Soni et al., 2014).

According to new research, theoretical frameworks and SMEs' real-world experiences diverge significantly despite the significance of supply chain resilience. There is a dearth of empirical data addressing SMEs' difficulties in establishing resilience since most research concentrates on large businesses (Gupta et al., 2020). In the context of SMEs, this disparity highlights the need for additional case studies and real-world examples to close the gap between theory and practice (Hohenstein et al., 2015).

The research questions guiding this inquiry are, what are the supply chain resilience strategies adopted by internationalizing SMEs to overcome supply chain disruptions and how effective are these supply chain strategies in overcoming supply chain disruptions for internationalizing SMEs. These questions aim to explore the strategies SMEs implement to enhance their supply chain resilience in the face of disruptions encountered during internationalization. Strategies may include diversifying suppliers to reduce dependency on a single source (Bak et al., 2020), investing in technology for better visibility and forecasting (Pettit et al., 2013), and establishing collaborative relationships with logistics partners to improve responsiveness (Christopher et al., 2004).

According to Hilmola et al. (2015) SMEs may adopt flexible manufacturing processes and maintain safety stock to buffer against demand fluctuations. Understanding the effectiveness of these strategies is crucial, as it allows for an assessment of how well they mitigate risks associated with global supply chains, such as geopolitical tensions, natural disasters, and market volatility (Ivanov, 2021). This study aims to offer important insights into best practices that help improve SMEs' competitiveness and resilience in the global market by looking at the tactics and their results.

1.3 Research questions

1. What are the supply chain resilience strategies adopted by internationalizing SMEs to overcome supply chain disruptions?

2. How effective are these supply chain strategies in overcoming supply chain disruptions for internationalizing SMEs?

2. Literature review

2.1 Internationalizing SMEs

Internationalizing small and medium-sized enterprises (SMEs) refers to how these businesses expand their operations beyond domestic markets to engage in international trade and investment. This phenomenon is increasingly significant in today's globalized economy, where SMEs are recognized as vital contributors to economic growth, innovation, and job creation (Pla-Barber et al., 2020). According to recent research, internationalizing SMEs frequently use their special strengths, like agility, knowledge of niche markets, and creative products, to compete in overseas markets (Oviatt et al., 1994).

Internationalization of SMEs has been the subject of some recent research. For instance, a study by Freixanet et al. (2020) emphasizes the role of entrepreneurial orientation in facilitating internationalization. It demonstrates that international markets are more successfully penetrated by proactive SMEs. Likewise, research by Kolagar et al. (2021) investigates the impact of digitalization on the internationalization of SMEs. It discloses that using emerging technologies dramatically increases their competitiveness in global markets. according to a different study by Herath (2016) effective supply chain strategies are essential for removing obstacles to entry in foreign markets.

Barriers to internationalization are a major reason why SMEs in these economies frequently fail, but by resolving supply-side issues and market access, joining global supply chains can boost competitiveness (World Bank, 2005). Furthermore, research indicates that SMEs in developing nations use innovative supply chain tactics, utilizing local vendors and government assistance to boost their competitiveness (Alam et al., 2025). Research by Magni et al. (2021) emphasizes the value of networking and establishing relationships to assist SMEs in entering international markets, stressing the need for strong connections with local partners. Finally, a study by Frimpong (2023) examines how sustainability practices affect SMEs' internationalization and suggests that eco-friendly tactics can increase their attractiveness in foreign marketplaces.

This research uses the internationalizing SME framework to examine how these companies handle the complexities of entering and competing in international markets. By focusing on the resilience practices that internationalizing SMEs use, this study aims to develop an understanding of their specific challenges and effective practices for developing their supply chain resilience. This study contributes to the literature on internationalization and offer practical guidance for SMEs wishing to enhance their international foothold in an increasingly uncertain business context.

2.2 Resource-Based View (RBV)

The theoretical framework this research applies is the Resource-Based View (RBV). The RBV contends that a company's competitive advantage is rooted in its distinctive resources and capabilities that possess value, rarity, inimitability, and non-substitutability (Barney, 1991). Based on such a view, firms can create value and maximize the exploitation of market opportunities by utilizing their internal assets, such as organizational processes, technical knowledge, and human capital (Ramon-Jeronimo et al., 2019). Through the RBV, SMEs can improve their global competitiveness in internationalizing by using their unique resources and capabilities to deal with the complexity of global markets successfully (Safari et al., 2020). Within the context of internationalizing SMEs, the RBV suggests that these companies can improve their global competitiveness by successfully using their unique resources and capabilities to deal with the complexity of global markets (Kaur et al., 2024).

Current research has applied the Resource-Based View (RBV) theory lens to study different aspects of internationalization for small and medium-sized enterprises (SMEs). For example, Mazzarol et al. (2021) emphasizes that SMEs utilize distinctive resources like innovation and customer relationships to access international markets. Likewise, Rialp et al. (2020) discusses how entrepreneurial competencies, as a desirable resource, provide SMEs with the ability to break internationalization barriers. In a different piece of research, Hsu et al. (2021) investigate the role of technological resources in the internationalization of SMEs, presupposing that firms with advanced technological competencies are most appropriate to compete globally. Kahiya et al. (2021) also recognizes the essential role of supply chain resources in the internationalization process, asserting that supply chain management can enhance the ability of SMEs to meet the needs of foreign markets. Finally, Kuckertz et al. (2020) explains how sustainability practices as valuable assets can grant SMEs a competitive advantage when competing in the global markets.

In this study, the RBV theory is utilized to analyze how internationalizing SMEs leverage their unique resources and capabilities to develop supply chain resilience strategies in the face of disruptions. The study examines the resources behind these SMEs' resilience and international success by examining their internal capabilities. This enhances understanding of the relationship between resource utilization and internationalization and provide practical guidance for SMEs seeking to optimize their resource utilization and enhance their competitive position in international markets.

2.3 Supply Chain Resilience Strategies

Strategies for improving adaptability to disruptions within a supply chain are a primary focus of resilience-building efforts in the chains. Such approaches focus on building flexibility, adaptability, and redundant systems to aid operations during unexpected scenarios (OECD, 2024). Most recent literature stresses the need for proactive actions like assessing risk exposure, broadening suppliers, and utilizing advanced technologies to strengthen resilience (Galetsi, 2021). For example, in the study of Ritchie et al. (2007), the authors focused on the need for some policy measures on rapid recovery mechanisms. They highlighted pre-districtive policies emphasizing corrective action strategies marked resorts aimed at rapidly restoring functioning.

Similarly, a systematic assessment by Ponomarov et al. (2009) highlights companies' different activities and tactics to improve supply chain resilience, focusing on operational flexibility and adaptation.

Strategies for supply chain resilience are crucial methods intended to improve supply chains' capacity to foresee, react to, and recover from interruptions. These tactics focus on improving the supply networks' resilience, flexibility, and adaptability to ensure operational continuity in the business during unexpected events (Diaz et al., 2024). Using Data Envelopment Analysis (DEA) to find and rank sustainable suppliers is another supply chain resilience tactic which helps businesses reduce disruptions, like those brought on by COVID-19 and geopolitical conflict, by making data-driven procurement decisions that improve productivity, dependability, and long-term growth(Hippold, 2020). For instance, Ritchie et al. (2007) study stresses the need for pre-disruptive support mechanisms coupled with recovery plans to restore functionality in the shortest time possible, reinforcing the need for SMEs to develop comprehensive resilience strategies.

Furthermore, a study by Soni et al. (2014) examines how supply chain complexity affects resilience and talks about proactive management techniques that may be used to handle these issues successfully and by creating successful resilience solutions requires an awareness of the complexities of supply chain networks (Pavlenko, 2024). When taken as a whole, these studies highlight the complexity of supply chain resilience and the necessity of various approaches to manage risks and successfully guarantee business continuity. When taken as a whole, these studies highlight the complexity of supply chain resilience and the necessity of various approaches to manage risks and guarantee successful business continuity (Ivanov, 2017).

Supply chain resilience strategies are used in this study to investigate how companies may prepare for and respond to interruptions. The primary objective is to identify the strategies that increase resilience, such as risk assessment, supplier variety, and technology investment. By looking at various tactics, the study aims to clarify which methods are best for creating robust supply chains, eventually improving operational continuity and giving businesses a competitive edge during disruptions.

3. Methodology

This study adopted a qualitative methodology to explore the supply chain resilience strategies of Sri Lankan internationalizing SMEs. Qualitative research was particularly suited for this inquiry as it enabled an in-depth understanding of the complex and nuanced experiences SMEs encountered while navigating international markets (Creswell et al., 2018; Denzin et al., 2011). A qualitative technique was employed to collect insights from managers and business owners, allowing for a comprehensive understanding of their strategies and challenges.

The study followed an interpretive methodology in line with related research, emphasizing the subjectivity of social phenomena and the importance of understanding how individuals interpreted their experiences (Schwandt, 2014). This perspective aligned with the study's goal of exploring how internationalizing SMEs perceived and implemented supply chain resilience strategies in response to disruptions.

In-depth interviews were conducted with owners and managers of SMEs expanding into international markets. This method allowed for the open exploration of participants' experiences, motivations, and decision-making processes (Kvale et al., 2015). Semi-structured interviews facilitated the free expression of ideas while enabling deeper exploration of specific topics.

The data were analyzed using thematic analysis to identify patterns and insights, as outlined by Braun et al. (2006). This approach facilitated the classification and interpretation of qualitative data, leading to a rich understanding of the resilience strategies employed by SMEs in the context of internationalization. The analysis focused on drawing key conclusions about the factors that enhanced supply chain resilience and contributed meaningfully to the overall research findings.

4. Implications of the Study

4.1 Theoretical Implications

This study aims to extend the existing body of literature on supply chain resilience strategies within the context of internationalizing SMEs. The study's emphasis on these businesses' particular difficulties and tactics advance the knowledge of how SMEs deal with market disruptions worldwide. Previous studies have highlighted various aspects of supply chain resilience, including risk management (Ponomarov et al., 2009), flexibility (Christopher et al., 2004), and the role of technology (Hsu et al., 2021). However, there remains a gap in understanding how these strategies specifically apply to internationalizing SMEs, particularly in the face of global disruptions. This study builds on the work of Mazzarol et al. (2021), who explored push-pull factors influencing internationalization, and Kahiya et al. (2021), who examined supply chain management practices. It also builds on the conclusions of Freixanet et al. (2020) on entrepreneurial orientation and Kuckertz et al. (2020) on sustainable practices and their effect on internationalization. The research offers a thorough framework for comprehending the resilience tactics of internationalizing SMEs by combining these viewpoints.

4.2 Extension of the Resource-Based View (RBV)

Furthermore, this study extends the Resource-Based View (RBV) application in the context of internationalizing SMEs. Previous research has utilized the RBV to explore competitive advantage (Barney, 1991) and resource allocation (Shibin et al., 2020). However, there is a need for further exploration of how unique resources and capabilities contribute to supply chain resilience in internationalizing SMEs. This study builds on the foundational work of Sheffi et al. (2005), who discussed resilience in supply chains, and the insights of Alberti et al. (2018) regarding the importance of resource management. Furthermore, it analyzes how supply chain resources impact internationalization initiatives, drawing on the research of Chen et al. (2023). This study explores how internationalizing SMEs can use their special talents to improve their competitive position in international markets by concentrating on the interaction between resources and resilience measures.

Additionally, this study includes topics that earlier studies in internationalizing SMEs have missed. There is a substantial knowledge vacuum about the unique difficulties SMEs face in global settings, even though a considerable portion of the literature has concentrated on giant multinational firms. The complex experiences of SMEs were examined in this study, focusing on their supply chain resilience tactics in the face of disruptions. The study intends to contribute to a more thorough knowledge of the dynamics of internationalizing SMEs in the face of global difficulties by concentrating on the viewpoints of owners and managers to unearth insights that have been mainly lacking in previous studies.

4.4 Practical Implications

This study offers insightful information for managers of Sri Lankan SMEs looking to improve the resilience of their supply chains in internationalization. SMEs face particular difficulties and disruptions as they frequently participate in international marketplaces, significantly affecting their business operations and competitiveness. By understanding the specific resilience strategies that successful internationalizing SMEs employ, managers can make informed decisions that bolster their organizations' ability to withstand and recover from disruptions.

According to the research's findings, managers have valuable tools for risk assessment and management. Managers can proactively reduce risks by spotting possible weaknesses in their supply chains. Some of these strategies include investing in technology that improves supply chain visibility or diversifying their suppliers. This proactive strategy can decrease downtime during disruptions and enhance operational continuity.

Second, the study emphasizes the crucial role of special resources and skills in increasing resilience. Managers learn how their companies may improve their competitive position in global markets by leveraging their strengths, which include creative goods, solid client relationships, and flexible procedures. SMEs may be better prepared to manage the difficulties of global supply chains if this understanding guide strategic planning and resource allocation.

The study also emphasizes creating a flexible and adaptive corporate culture. Managers discover the importance of promoting candid communication and teamwork among employees, which may speed decision-making and enable more efficient solutions to unforeseen problems. By developing a resilient organizational culture, SMEs can improve their responsiveness and agility in the face of disruptions.

Lastly, the study provides a framework for ongoing improvement in the supply chain practice. Based on the knowledge gathered from this study, managers urged to review and improve their resilience tactics periodically. This iterative process enables SMEs to stay ahead of emerging risks and adapt to changing market conditions, ultimately contributing to long-term sustainability and success in international markets.

5. Limitations and Avenues for Future Research

This study acknowledges several limitations that may impact the generalizability and applicability of its findings. One major drawback is the absence of thorough frameworks, including many stakeholder viewpoints. Current research frequently falls short of comprehensive models that consider all the variables affecting supply chain resilience, which restricts the findings' generalizability in other contexts (Zavala-Alcívar et al., 2020). Furthermore, empirical research addressing the particular difficulties SMEs face across various industries is noticeably lacking. This literature gap shows little about how resilience techniques can be successfully tailored to various industries' particular needs (Koporcic et al., 2025).

Another limitation is the tendency of existing literature to focus primarily on larger, established firms, neglecting the distinct dynamics and resource constraints that SMEs encounter in their internationalization efforts (Christopher et al., 2004). This oversight can result in insufficient insights for SME managers trying to increase the resilience of their supply chains. Furthermore, much research emphasizes finding short-term solutions to disruptions rather than building long-term resilience, which is necessary for sustained success in international markets (Brown et al., 2022). This short-term focus may hinder the development of strategies that promote enduring resilience.

Given these limitations, several directions for further investigation become apparent. Creating collaborative models, including various stakeholders, governments, non-governmental organizations (NGOs), and business partners, must be investigated first. Such cooperative structures could improve supply chains' resilience by encouraging the sharing of resources and expertise (Banomyong, 2018). Future research should also examine how cutting-edge digital technologies like blockchain and artificial intelligence could improve supply chain resilience. Research indicates that blockchain and artificial intelligence (AI) can improve supply chains' flexibility, efficiency, and transparency while strengthening their resistance to disturbances (Barnum, 2024). The potential of cutting-edge technologies like the Internet of Things and quantum computing to improve supply chain operations' resilience and agility is being investigated (KPGM, 2024). It will be important to know the potential of these technologies for small and medium-sized enterprises (SMEs) wishing to innovate and survive in an increasingly digitalized world (Tsolakis et al., 2022).

Also, researching specific industries may reveal more about individual businesses' challenges and coping strategies. This would give more targeted recommendations tailored to the precise needs of SMEs in different situations (Gamage et al., 2020). Because longitudinal studies make it easier to evaluate resilience measures' effectiveness over time, they may be beneficial in helping SMEs adapt to shifting market conditions and disruptions (Atiase et al., 2023). Finally, examining the role of organizational culture in fostering resilience can yield valuable insights into how SMEs can build a more adaptable workforce capable of responding to challenges (Reinhold, 2024). Research should also consider the implications of public policy on supply chain resilience, particularly how government support can facilitate the development of robust supply chains for SMEs (Nakandala et al., 2024). Future studies can substantially advance the comprehension and improvement of supply chain resilience in internationalizing SMEs by tackling these limits and investigating these pathways.

References

Alam, M. C., Setiawan, B., Hery Toiba, Maulidah, S., & Rahman, M. S. (2025). Supply chain management practices of SMEs in developing countries: Bibliometric and systematic reviews. *Agricultural Economics (Zemědělská Ekonomika)*, *71*(2), 99–112. https://doi.org/10.17221/290/2024-agricecon

Alberti, F. G., Ferrario, S., & Pizzurno, E. (2018). Resilience: resources and strategies of SMEs in a new theoretical framework. *International Journal of Learning and Intellectual Capital*, *15*(2), 165. https://doi.org/10.1504/ijlic.2018.091969

Atiase, V., Senyo Agbanyo, Patronella Ganza, Ameh, J., & Sambian, R. (2023). Understanding SME financial resilience and survivability in Africa. *Edward Elgar Publishing EBooks*, 106–133. https://doi.org/10.4337/9781802203929.00014

Bandara, H. M. B. M., Manchanayake, S. M. A. M., Perera, H. A. C. S., Bandara, P. R. W. D., Madhavika, N., Jayasinghe, J. K. P. S. K., & Ehalapitiya, K. H. S. M. (2023). Supply Chain Resilience During Economic Crisis: A Case of Construction SMEs in a Developing Country.

Bak, O., Shaw, S., Collichia, C., & Kumar, V. (2020). A Systematic Literature Review of Supply Chain Resilience in Small Medium Enterprises (SMEs): A call for further research. *Brunel.ac.uk*, *70*(1). https://bura.brunel.ac.uk/handle/2438/21272

Banomyong, R. (2018). Collaboration in Supply Chain Management. *International Transport Forum Discussion Papers*. https://doi.org/10.1787/7001c5d6-en

Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

Barnum, E. (2024, June 3). *Supply Chain Collaboration: Strategies, Benefits & Solutions | Ivalua*. Ivalua. https://www.ivalua.com/blog/supply-chain-collaboration/?form=MG0AV3

Bettiol, M., Burlina, C., Chiarvesio, M., & Di Maria, E. (2022). SMEs and the regionalization of global value chains: an untold story from the Italian industrial districts. *Competitiveness Review: An International Business Journal*, *32*(5). https://doi.org/10.1108/cr-11-2021-0161

Bhamra, R., Dani, S., & Burnard, K. (2011). Resilience: The key to a successful supply chain. International Journal of Production Research, 49(18), 5489–5509. https://doi.org/10.1080/00207543.2011.563826

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brown, K., Jie, F., Le, T., Sharafizad, J., Sharafizad, F., & Parida, S. (2022). Factors Impacting SME Business Resilience Post-COVID-19. *Sustainability*, *14*(22), 14850. https://doi.org/10.3390/su142214850

Chen, Y.-A., Guo, S.-L., & Huang, K.-F. (2023). Antecedents of internationalization of Taiwanese SMEs: a resource-based view. *International Journal of Emerging Markets*. https://doi.org/10.1108/ijoem-05-2022-0875

Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *The International Journal of Logistics Management*, 15(2), 1–13. https://doi.org/10.1108/09574090410700275

Coşkun, A. E., & Erturgut, R. (Eds.). (2023). How Do Uncertainties Affect Supply-Chain Resilience? The Moderating Role of Information Sharing for Sustainable Supply-Chain Management. *Sustainability*, *16*(1), 131–131. https://doi.org/10.3390/su16010131

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.

Diaz, S., & Krantz, T. (2024, August 30). *Supply chain resiliency* (A. Jonker, Ed.). Ibm.com. https://www.ibm.com/think/topics/supply-chain-resiliency

Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE Handbook of Qualitative Research* (4th ed.). Sage Publications.

EDB Sri Lanka. (2020). *The Role of SMEs in Sri Lanka Exports - EDB Sri Lanka*. Srilankabusiness.com. https://www.srilankabusiness.com/blog/role-of-smes-sri-lanka.html?form=MG0AV3&form=MG0AV3

Freixanet, J., Braojos, J., Rialp-Criado, A., & Rialp-Criado, J. (2020). Does international entrepreneurial orientation foster innovation performance? The mediating role of social media and open innovation. *The International Journal of Entrepreneurship and Innovation*, 146575032092232. https://doi.org/10.1177/1465750320922320

Frimpong, K. (2023). Internationalization and corporate sustainability expenditure: The role of institutional support and foreign knowledge acquisition. *Business Strategy and Development*, *6*(4), 1072–1086. https://doi.org/10.1002/bsd2.298

Galetsi, P. (2021). Supply Chain Disruptions and resilience: a Major Review and Future Research Agenda. *Annals of Operations Research*, *319*(1), 965–1002. Springer. https://doi.org/10.1007/s10479-020-03912-1

Gamage, S. K. N., Ekanayake, E., Abeyrathne, G., Prasanna, R., Jayasundara, J., & Rajapakshe, P. (2020). A Review of Global Challenges and Survival Strategies of Small and Medium Enterprises (SMEs). *Economies*, *8*(4), 79. MDPI. https://www.mdpi.com/2227-7099/8/4/79

Gupta, A., & Kumar Singh, R. (2022). Managing resilience of micro, small and medium enterprises (MSMEs) during COVID-19: analysis of barriers. *Benchmarking: An International Journal*, *30*(6). https://doi.org/10.1108/bij-11-2021-0700

Hassan, J., Chugh, R., Ren, M., & Gao, H. (2024). Situational control and strategic choices during supply chain disruptions: case studies of SME exporters. *International Marketing Review*. https://doi.org/10.1108/imr-07-2023-0161

Herath, R. P. (2016). The Strategic Importance of supply Chain Management in SMEs. *ResearchGate*. https://doi.org/10.13140/RG.2.1.5132.2969

Hilmola, O.-P., Lorentz, H., Hilletofth, P., & Malmsten, J. (2015). Manufacturing strategy in SMEs and its performance implications. *Industrial Management & Data Systems*, *115*(6), 1004–1021. https://doi.org/10.1108/imds-12-2014-0380

Hohenstein, N.-O., Feisel, E., Hartmann, E., & Giunipero, L. (2015). Supply chain management in a crisis: A literature review. *International Journal of Production Research*, 53(16), 5031-5050. https://doi.org/10.1080/00207543.2015.1005800

Hsu, C. C., Chen, Y. S., & Cheng, C. H. (2021). The impact of digital transformation on the internationalization of SMEs: Evidence from Taiwan. *Journal of Small Business Management*, 59(2), 234-256. https://doi.org/10.1111/jsbm.12445

Ivanov, D. (2017). Supply Chain Resilience: Modelling, Management, and Control. *Structural Dynamics and Resilience in Supply Chain Risk Management*, 45–89. https://doi.org/10.1007/978-3-319-69305-7_3

Ivanov, D. (2021). Supply Chain Viability and the COVID-19 pandemic: a conceptual and formal generalisation of four major adaptation strategies. *International Journal of Production Research*, *59*(12), 3535–3552. https://doi.org/10.1080/00207543.2021.1890852

Johnson, H. (2025). *Building Resilient Supply Chains in the Face of Global Uncertainty: Insights from Small and Medium-Sized Enterprises (SMEs)*. https://doi.org/10.20944/preprints202501.2369.v1

Kahiya, E. T., & Naude, P. (2021). Supply chain management practices and the internationalization of SMEs: A systematic review. *International Journal of Production Economics*, 231, 107850. https://doi.org/10.1016/j.ijpe.2020.107850

Kaur, K., & Kumar, S. (2024). Resource-based view and SME internationalization: a systematic literature review of resource optimization for global growth. *Management Review Quarterly*. https://doi.org/10.1007/s11301-024-00478-1

Kiessling, T., Dabić, M., Yadav Sandep, Huck, N., & Maley, J. F. (2024). Supply Chain Disruptions and Need for Resilience: SMEs Direct/Indirect Exporting and Rapid Internationalization. *IEEE Transactions on Engineering Management*, 1–43. https://doi.org/10.1109/tem.2024.3514701

Kolagar, M., Reim, W., Parida, V., & Sjödin, D. (2021). Digital servitization strategies for SME internationalization: the interplay between digital service maturity and ecosystem involvement. *Journal of Service Management*, *33*(1), 143–162. https://doi.org/10.1108/josm-11-2020-0428

Koporcic, N., Kukkamalla, P. K., Markovic, S., & Maran, T. (2025). Resilience of small and medium-sized enterprises in times of crisis: an umbrella review. *Review of Managerial Science*. https://doi.org/10.1007/s11846-025-00883-0

KPGM. (2024). *ai-blockchain-and-iot-transform-supply-chains*. KPMG. https://kpmg.com/xx/en/our-insights/operations/ai-blockchain-transform-supply-chain-performance.html?form=MG0AV3

Kuckertz, A., Hinderer, N., & Kuckertz, W. (2020). Sustainability and internationalization: The role of sustainability practices in the internationalization of SMEs. *Journal of Business Research*, 116, 1-10. https://doi.org/10.1016/j.jbusres.2020.05.020

Kvale, S., & Brinkmann, S. (2015). *Interviews: Learning the craft of qualitative research interviewing* (3rd ed.). Sage Publications.

Madhavika, N., Bandara, M., Manchanayake, M., Perera, C., Bandara, W., Jayasinghe, P., & Ehalapitiya, S. (2024). Navigating economic crisis: Factors shaping resilience in Sri Lankan construction SME supply chains. *International Journal of Construction Management*, 1–13. https://doi.org/10.1080/15623599.2024.2415158

Magni, D., Chierici, R., Fait, M., & Lefebvre, K. (2021). A network model approach to enhance knowledge sharing for internationalization readiness of SMEs. *International Marketing Review*, *39*(3). https://doi.org/10.1108/imr-03-2021-0110

Mazzarol, T., & Soutar, G. N. (2021). Push-pull factors influencing internationalization: A study of SMEs in Australia. *International Journal of Entrepreneurial Behavior & Research*, 27(1), 1-20. https://doi.org/10.1108/IJEBR-05-2020-0270

Nakandala, D., Chen, J., & Chikweche, T. (2024). SME supply chain resilience in disruptive times: the effects of supply chain robustness, access to government assistance and disruption intensity. *Business Process Management Journal*. https://doi.org/10.1108/bpmj-02-2024-0073

OECD. (2024). Promoting resilience and preparedness in supply chains. *OECD Trade Policy Papers*. https://doi.org/10.1787/be692d01-en

Oviatt, B. M., & McDougall, P. P. (1994). Toward a Theory of International New ventures. *Journal of International Business Studies*, *25*(1), 45–64. https://doi.org/10.1057/palgrave.jibs.8490193

Pavlenko, M. (2024, January 12). *Supply Chain Resilience: Strategies and Technologies That Help Manage Risks and Withstand Disruptions*. AltexSoft. https://www.altexsoft.com/blog/supply-chain-resilience/?form=MG0AV3

Pettit, T. J., Croxton, K. L., & Fiksel, J. (2013). Ensuring supply chain resilience: Development of a conceptual framework. Journal of Business Logistics, 34(1), 46–76. https://doi.org/10.1111/jbl.12010

Pla-Barber, J., Villar, C., & Ghauri, P. (2020). The internationalization of SMEs: Building models for long-term development. *BRQ Business Research Quarterly*, *23*(2), 88–90. https://doi.org/10.1177/2340944420916330

Ponomarov, S. Y., & Holcomb, M. (2009). Understanding the concept of supply chain resilience. The International Journal of Logistics Management, 20(1), 124-143. https://doi.org/10.1108/09574090910954873

Rialp, J., Matos, N., & Ribeiro, E. (2020). Does international entrepreneurial orientation foster innovation performance? The mediating role of open innovation and social media. *Journal of Business Research*, 118, 456–466. DOI: 10.1016/j.jbusres.2020.07.0

Ramon-Jeronimo, J. M., Florez-Lopez, R., & Araujo-Pinzon, P. (2019). Resource-Based View and SMEs Performance Exporting through Foreign Intermediaries: The Mediating Effect of Management Controls. *Sustainability*, *11*(12), 3241. https://doi.org/10.3390/su11123241

Rathnasinghe , N. (2024, May 15). *SME in Sri Lanka: Small and Medium-sized Enterprises (SMEs) of Sri Lanka*. Friedrich Naumann Foundation. https://www.freiheit.org/south-asia/small-and-medium-sized-enterprises-smes-sri-lanka?form=MG0AV3&form=MG0AV3

Reinhold, K. (2024). Building Resilience: Pillars of Workforce Agility at Organizational and Individual Levels in SMEs. *Management for Professionals*, 231–247. https://doi.org/10.1007/978-3-031-50836-3_11

Ritchie, B., & Brindley, C. (2007). Supply chain risk management and the role of the supply chain manager. International Journal of Logistics Management, 18(2), 169–184. https://doi.org/10.1108/09574090710816980

Safari, A., & Saleh, A. S. (2020). Key determinants of SMEs' export performance: a resource-based view and contingency theory approach using potential mediators. *Journal of Business & Industrial Marketing*, *35*(4), 635–654. https://doi.org/10.1108/jbim-11-2018-0324

Santos-Paulino, A. U., Trentini, C., & Bakhtiarizadeh, H. (2023, August 31). *Internationalization of Small and Medium-sized Enterprises (SMEs): A New Assessment*. Ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4565868

Schwandt, T. A. (2014). The Sage Dictionary of Qualitative Inquiry (4th ed.). Sage Publications.

Sheffi, Y., & Rice, J. B. (2005). A supply chain view of the resilient enterprise. MIT Sloan Management Review, 47(1), 41–48. https://sloanreview.mit.edu/article/a-supply-chain-view-of-the-resilient-enterprise/

Shibin, K. T., Dubey, R., Gunasekaran, A., Hazen, B., Roubaud, D., Gupta, S., & Foropon, C. (2020). Examining sustainable supply chain management of SMEs using resource based view and institutional theory. *Annals of Operations Research*. https://doi.org/10.1007/s10479-017-2706-x

Singh, R. K., & Kumar, R. (2020). Strategic issues in supply chain management of Indian SMEs due to globalization: an empirical study. *Benchmarking: An International Journal*, *27*(3), 913–932. https://doi.org/10.1108/bij-09-2019-0429

Soni, P., Jain, V., & Kumar, A. (2014). Supply chain resilience: A review and future directions. *International Journal of Logistics Systems and Management*, 19(1), 1-20. https://doi.org/10.1504/IJLSM.2014.059123

Tsolakis, N., Schumacher, R., Dora, M., & Kumar, M. (2022). Artificial intelligence and blockchain implementation in supply chains: a pathway to sustainability and data monetisation? *Annals of Operations Research*, *327*(1), 157–210. https://doi.org/10.1007/s10479-022-04785-2

World Bank. (2005). *ENABLING SMES TO ENTER THE INTERNATIONAL SUPPLY CHAIN The Role of SMEs in the Global Economy*. https://documents1.worldbank.org/curated/en/327131468313833609/pdf/451520BRI0Box31ling0SMEs01GPF0brief.pdf

Yiğit Kazançoğlu, Çisem Lafçı, Yalçın Berberoğlu, Upadhyay, A., Rocha-Lona, L., & Kumar, V. (2023). The effects of globalization on supply chain resilience: outsourcing techniques as interventionism, protectionism, and regionalization strategies. *Operations Management Research*, *17*(2). https://doi.org/10.1007/s12063-023-00429-1

Yordanova, D., Dana, L.-P., Manolova, T. S., & Pergelova, A. (2024). Digital Technologies and the Internationalization of Small and Medium-Sized Enterprises. *Sustainability*, *16*(7), 2660. https://doi.org/10.3390/su16072660

Zavala-Alcívar, A., Verdecho, M.-J., & Alfaro-Saiz, J.-J. (2020). A Conceptual Framework to Manage Resilience and Increase Sustainability in the Supply Chain. *Sustainability*, *12*(16), 6300. https://doi.org/10.3390/su12166300

A Study on Role of Visual Merchandising in Enhancing Customer Experience

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Abstract

The study "A Study on the Role of Visual Merchandising in Enhancing Customer Experience" investigates how visual merchandising affects consumer perceptions and improves the general shopping experience in retail establishments. The goal is to comprehend how different aspects of visual merchandising influence consumer engagement and behavior. According to research, elements like a neat store design, eye-catching product displays, well-placed lighting, and captivating audio components are important for drawing in customers and promoting in-store interaction. The customer experience is further enhanced by the use of mannequins, feature walls, and unambiguous signage, while interactive elements like touchscreen product displays encourage product exploration.

The study's relevance and conclusions were reinforced by the invaluable practical experience in inventory management, customer service, and store operations that came from insights obtained during a 2.5-month internship. This study on retail stores visual merchandising strategy emphasize how important it is for consumer experience and engagement. Key findings shows that enticing store layouts, well placed lighting, and captivating displays are examples of efficient visual merchandising techniques that are essential for drawing customers and improving their shopping experiences.

Keywords: *Visual Merchandising, Customer Experiences, Customer Engagement, Store Layout, Merchandising Strategies, Retail Management*

1. Introduction

A crucial part of retail strategy is visual merchandising, which entails the careful planning and execution of product displays, store layouts, and in-store activities to produce an interesting and eye-catching shopping environment. Retailers can greatly improve the visual appeal and usability of their space by carefully choosing and positioning components like lighting, signage, product placement, and spatial layout. In order to draw in and keep consumers, visual merchandising is essential. Retailers strive to provide a shopping experience that appeals to consumer preferences and promotes exploration of the brand's entire product line in order to successfully engage their target audience. When done correctly, visual merchandising helps create a strong and unique brand identity in addition to helping a store stand out from its rivals.

2. Significance of the study:

The purpose of this study is to look into how retail stores visual merchandising affects the consumer experience. This study intends to offer useful insights for retailers looking to enhance their shop settings and boost customer happiness by investigating the connection between visual merchandising tactics and consumer engagement. The study's conclusions can help stores develop a more immersive and captivating shopping experience that increases consumer loyalty and retention by informing the company's visual merchandising strategy.

3. Research Methodology

Problem Identification: Retailers prioritize visually appealing and well-organized displays that actively promote exploration and discovery, according to store visits. Enhancing the overall shopping experience and accurately representing local customer preferences are two important functions of visual merchandising. The primary goal of this study is to evaluate customer perceptions of current visual merchandising strategies and to identify areas for improvement that could further strengthen the retailer’s position as a leading value fashion brand.

Type of Research: The descriptive research methodology is used in this study. Because it enables a thorough analysis of the ways in which visual merchandising strategies affect the customer experience, descriptive research is suitable. In order to strengthen brand identification and engagement, the study aims to evaluate current consumer perceptions and ascertain how visual merchandising can be maximized.

Source of Data: The research utilizes Primary Data sources. Data was gathered through direct observation within the store environment. Observations included store layout, product presentation, lighting, colour schemes and customer interaction with displays. First hand data was essential to understand the real- time impact of visual merchandising strategies on consumer behaviour.

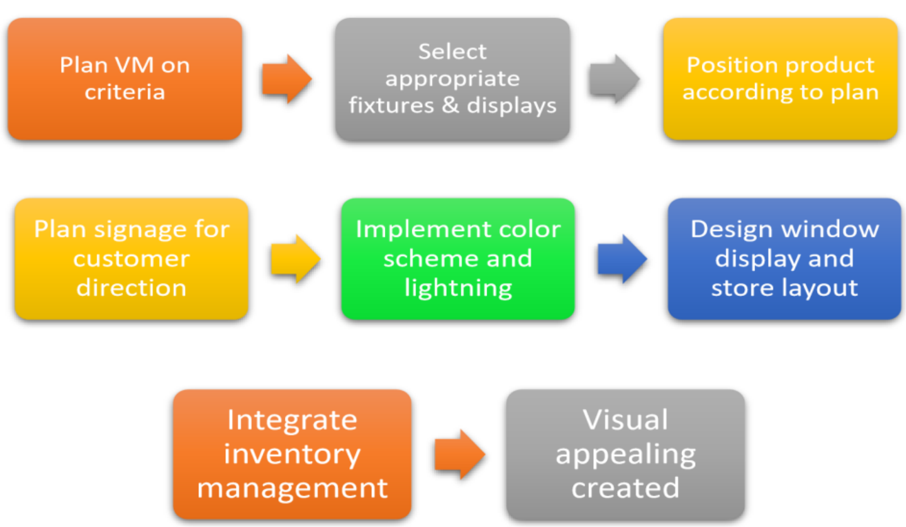
Data Collection Method: The basic data was gathered using the Observation Method. Conversations with store staff and industry mentors supplemented observations. The study highlighted the use of colour and lighting, the placement of high-demand items strategically, and eye-catching visuals including gondolas, riser platforms, mannequins, and tiered shelving. All of these components work together to create a captivating shopping experience. Customers' active interaction with the items demonstrated how well visual merchandising worked to draw in customers and improve their shopping experience.

4. Results

The study shows that the store has a wide variety of products, such as clothing and accessories for women, men, and kids, as well as a large assortment of cosmetics and personal care items and adaptable shoes for every age. Although the stores effectively serves a wide range of consumer demands and prioritizes a satisfying shopping experience by implementing rules like simple exchanges, it nonetheless has operational difficulties. It still uses a lot of manual processes, especially for inventory and cash management, which results in inefficiencies and a greater chance of mistakes. Routine activities are slowed down and data consistency is hampered by the absence of sophisticated technology integration. Increasing automation and implementing data-driven solutions would simplify cash management and increase inventory accuracy.

Processes: The stores uses organized and effective processes to handle customer service, inventory, inbound and outbound logistics, and billing. While the billing process guarantees accurate and seamless transactions, SAP is used to verify and document goods during both inward and outward movements. Defective goods, barcode tagging, scrap, shrinkage, and trial room operations are all handled by specialized processes. Accuracy, operational effectiveness, and customer satisfaction are further improved by additional procedures like stock audits, cash handling, End-of-Season Sale (EOSS) operations, gift card management, and hiring. When taken as a whole, these procedures support excellent retail standards and aid in efficient inventory management.

Visual Merchandising Process follows as:



Products and service offerings:

According to the study, the business has built a solid reputation in the market by providing a large range of goods in different categories:

Apparel and Accessories: The store offers stylish and reasonably priced items to appeal to all age groups, including men, women, and children.

Segments for Beauty and Footwear: A wide range of skincare, makeup, bath and body items, and footwear are offered to suit all age groups and situations.

Operational Efficiency and Technology use:

Manual Operations: A large percentage of internal store operations are carried out by hand, which increases the risk of inefficiencies and human mistake.
Cash Management: Labour dependency and the possibility of inconsistencies are increased when cash-related operations are not fully automated.
Technology Integration: Inadequate departmental technology integration has hindered decision-making abilities and produced inconsistent data.

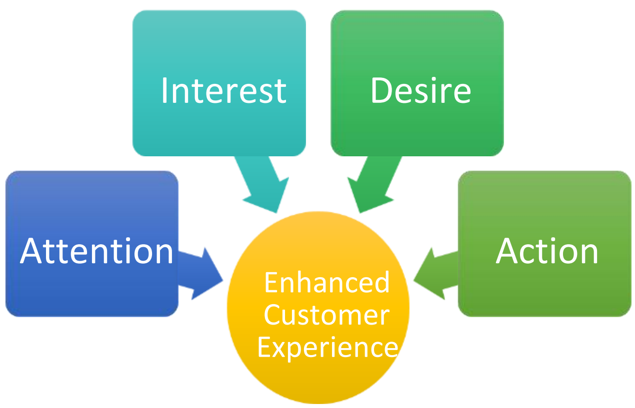
Inventory Management:
Although there are procedures in place to prevent losses, they are nevertheless insufficient because of human record-keeping and inaccurate data. To make stock monitoring and replenishment more efficient, stronger loss reduction procedures and automated systems are required.

Additionally, the business operates under a strong ethical framework, and rigorous safety and conduct regulations promote the well-being of its employees. The impact of visual merchandising was also investigated in the study, which concluded that although existing tactics do affect consumer behavior, there is undoubtedly room for improvement. The store can boost foot traffic and sales by better matching displays to customer preferences. Customer input insights will help develop evidence-based visual merchandising guidelines that aim to improve overall customer happiness. In order to further promote operational excellence and customer service quality, the findings also highlight the need for improved personnel training, particularly in the areas of behavior management and language accessibility.

5. Discussion

The study's conclusions highlight the store's advantages in providing a wide variety of inclusive goods that cater to the various demands of its clientele. The business appeals to a broad audience and expands its market reach by offering clothing, accessories, cosmetics, and footwear for all demographics. The direct-to-consumer strategy greatly increases customer satisfaction and brand loyalty when combined with reasonable prices and customer-focused practices like simple exchanges. A further area of strategic significance is visual merchandising. The study emphasizes how current visual displays may be more in line with customer expectations and tastes, even though they still have an impact on consumer behavior. According to consumer input, enhancing product presentation and customizing store layouts can increase foot traffic and conversion rates. The store may be able to increase sales and enhance the customer experience by implementing evidence-based visual merchandising techniques that are based on consumer insights.

The AIDA model Attention, Interest, Desire, and Action is successfully applied by the store through smart visual merchandising to improve customer satisfaction and increase sales. The brand stimulates action with a store layout that guarantees a seamless, captivating, and shopper-friendly experience builds desire by presenting products in aspirational ways that help customers visualize ownership maintains interest through thematic displays and showcasing product features and starts with bold colours, creative layouts, and striking lighting. Customers are more satisfied and make more purchases in the shop setting created by this integration.



6. Conclusion

In conclusion, the retail store's main advantages are its cost-effectiveness, ethical business practices, selection of products, and dedication to client happiness. However, insufficient personnel training and operational inefficiencies compromise these capabilities. Enhancing staff development, automating critical procedures, and integrating technology particularly through behavior-focused and bilingual training could greatly boost output. Visual merchandising can also be optimized based on data-driven insights to improve foot traffic, sales, and the entire consumer experience. In the highly competitive retail environment, addressing these issues will be crucial to the store's long-term success.

References

Upadhyay, D. A., Jauhari, S., & Singh, V. (2017, April 8). *Visual merchandising: An integrative review*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3192449

Wanniachchi, N. H., & Kumara, V. (2016). A study on impact of visual merchandising on consumer buying behavior in clothing retail stores. *ResearchGate*. https://www.researchgate.net/publication/327730461_A_Study_on_Impact_of_Visual_Merchandising_on_Consumer_Buying_Behaviour_in_Clothing_Retail_Stores

Mehta, N. P., & Chugan, P. K. (2013). The impact of visual merchandising on impulse buying behavior of consumer: A case from Central Mall of Ahmedabad India. *Universal Journal of Management, 1*(2), 76–82. https://doi.org/10.13189/ujm.2013.010206

Kim, J. (2013). A study on the effect that V.M.D (Visual Merchandising Design) in store has on purchasing products. *ResearchGate*. https://www.researchgate.net/publication/298485255_A_study_on_the_effect_that_VMD_Visual_Merchandising_Design_in_store_has_on_purchasing_products

Saricam, C., Okur, N., Erdem, D., Akdag, S., & Kilikci, B. (2018). Analyzing the visual merchandising elements for the apparel retailers. *IOP Conference Series: Materials Science and Engineering, 460*, 012010. https://doi.org/10.1088/1757-899x/460/1/012010

Dixit, M., & Singh, V. B. (2018). The impact of visual merchandising on consumer impulsive buying behavior. *International Journal of Creative Research Thoughts (IJCRT), 6*(1), 1305–1306. https://ijcrt.org/papers/IJCRT1801172.pdf

Ijraset. (n.d.). *Paradigm shift in retail industry—An ongoing evolution in visual merchandising*. IJRASET. https://www.ijraset.com/researchpaper/paradigm-shift-in-retail-industry-an-ongoing-evolution-in-visualmerchandising

Upadhyay, A., Jauhari, S., & Singh, V. (2019). A study of visual merchandising elements in fashion retail stores and their impact on customer behavior. *ResearchGate*. https://doi.org/10.13140/RG.2.2.28594.38089

Pereira, L., Dias, Á. L., & Aires, M. (2024). How visual merchandising influences Generation Z purchasing behavior in supermarkets. *International Journal of Arts and Technology, 15*(1). https://doi.org/10.1504/ijart.2024.10059825

Thakor, M., Prajapati, R. K., & Prajapati, S. G. (2012). Factors that encourage impulse purchase & impact of visual merchandising on the purchase decision of women. *ResearchGate*. https://www.researchgate.net/publication/292141431

Jain, V., Sharma, A., & Narwal, P. (2012). Impact of visual merchandising on consumer behavior towards women's apparel. *ResearchGate*. https://www.researchgate.net/publication/260219500

Saeed, A. (2015). *Impact of lighting as a visual merchandising tool on consumer's purchase behavior*. Academia.edu. https://www.academia.edu/88416977

Wanniachchi, N. H. (2016). *Impact of visual merchandising on consumer buying behavior in clothing retail stores*. Academia.edu. https://www.academia.edu

Zulkurnain, N. A. Z. (2019). *Visual merchandising and customers impulse buying behaviour: A case of a fashion specialty store*. Academia.edu. https://www.academia.edu

Antony, R. (2019). *A study on store concept of visual merchandising in fashion retail*. Academia.edu. https://www.academia.edu

A Comprehensive Analysis of Financial Metrics and Rating Methodologies in the Infrastructure Industry

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Abstract

This study presents a comprehensive examination of financial metrics and credit rating methodologies in India's infrastructure industry. With infrastructure emerging as a critical sector for national development, the study analyzes key financial ratios — profitability, leverage, coverage, turnover, and liquidity — across major infrastructure firms. Additionally, it explores the methodologies employed by credit rating agencies such as CRISIL, ICRA, and CARE Ratings, which assess operational, financial, and project-specific risks. The paper identifies challenges such as financing constraints, execution delays, and regulatory bottlenecks while highlighting the importance of credit ratings in determining financial viability and investment decisions. Statistical analysis reinforces the interrelationship between financial ratios and credit ratings, offering practical insights for investors and policymakers.

Key Words: *Infrastructure Industry, Financial Metrics, Credit Rating, Debt Coverage, Profitability Ratios, Leverage Ratios, Liquidity Ratios, Risk Management, Rating Methodologies, Public-Private Partnerships (PPP)*

1. Introduction

The Infrastructure industry is the backbone of a nation's economic progress, covering essential services such as transportation, utilities, and telecommunications. Due to the scale and long-term nature of infrastructure projects, financial evaluation and creditworthiness assessments are critical. This study focuses on analyzing financial metrics like profitability, liquidity, and leverage, along with reviewing the Rating Methodologies applied by prominent agencies. The findings serve to guide investors, policymakers, and financial institutions in managing risk and making informed decisions regarding infrastructure investments in India.

2. Literature Review

Reena Agrawal's (2020) study critically examines the challenges and evolving methods of financing infrastructure projects in India, particularly during the Eleventh and Twelfth Five Year Plans. Despite policy efforts by the government and RBI, a significant gap between infrastructure demand and financial resources persists. The paper recommends innovative business models, greater private sector participation, leveraging diaspora funds, and policy reforms to address liquidity constraints and improve regional connectivity, providing practical pathways to strengthen infrastructure financing in India. It looks at how infrastructure was developed throughout the Eleventh and Twelfth Five Year Plans, looks at funding sources, and assesses the steps taken by the government to make funding easier. A large disparity between supply and demand still exists, notwithstanding efforts by the Indian government and Reserve Bank of India. To close the finance and knowledge gaps, the article suggests novel business structures, increasing private involvement, taking use of the diaspora, reviewing bank liquidity standards, and strengthening regional connectivity.

K.C. Iyer and Dhruba Purkayastha's (2017) study highlights the crucial role of credit ratings in infrastructure project finance, emphasizing their impact on risk mitigation, capital mobilization, and financial sustainability. The paper underscores the challenges in accurately assessing credit risk for large, long-term projects and proposes strategies to strengthen risk control mechanisms within infrastructure financing frameworks, reinforcing the significance of reliable credit assessments for project viability. The study looks at how credit ratings affect risk mitigation, draw in capital, and guarantee the financial sustainability of infrastructure projects. It also discusses the difficulties in evaluating credit risk and offers solutions for better risk control in financing for infrastructure.

Puneet Koul, Piyush Verma, and Lalit Arora's (2021) study offers valuable insights into the credit rating dynamics of PPP road projects in India by analyzing 18 SPVs over nine years. It identifies promoter credibility, regulatory environment, and traffic growth as key determinants of creditworthiness. The research highlights frequent challenges like underperformance in toll collections and fluctuating traffic projections, affecting even fixed-revenue projects. The findings provide practical guidance for government agencies and developers to enhance financial viability and rating stability in PPP infrastructure ventures. It examines the variables affecting the special purpose vehicles' (SPVs') creditworthiness while they are engaged in PPP road projects in India. It examines 18 SPVs' credit rating reports from 2010 to 2019 in order to pinpoint the major advantages, limitations, and rating-sensitive issues. Significant influences included the trustworthiness of promoters, the state of regulations, and the growth of traffic. According to the report, these understandings can assist government organizations and project developers in reducing obstacles and enhancing the PPP projects' financial viability.

Deog Sang BAE's (2020) study addresses the complexities of evaluating real asset investments like infrastructure, which offer income stability but pose challenges due to their illiquidity and uniqueness. The paper introduces a new internal credit rating framework designed to provide timely, cost-effective, and standardized assessments aligned with international benchmarks. The study concludes that this model consistently delivers ratings comparable to established agency standards, making it a practical and efficient tool for private investors and financial institutions managing real asset investments. It examines real asset investments, such as real estate or infrastructure, which are becoming more and more significant in financial portfolios because of their stability against income fluctuation. But these investments frequently come with difficulties like uniqueness and illiquidity, so it's critical for private investors to fully comprehend every detail of every transaction.Traditionally, to assess these investments, banks and credit agencies have relied on costly and time-consuming qualitative research carried out by specialists. In order to promptly evaluate trade offers and provide a rating that is in line with international norms, the paper presents a new internal rating system. According to the study, deals are usually rated by this methodology between BBB and BB, which corresponds with the average ratings provided by international agencies for real assets. This shows that the suggested rating system for assessing these kinds of investments is sensible and useful.

Ashwini H. A. and Dr. M. G. Krishnamurthy's (2018) study highlights the crucial role of MSMEs in India's economy while addressing the significant credit access challenges they face. The paper identifies poor credit assessment practices, weak management systems, and regulatory constraints as key barriers. It emphasizes the importance of credit ratings as an impartial tool for evaluating MSMEs' financial health, thereby improving their access to formal financing. The study reinforces that integrating credit ratings into lending decisions can benefit both MSMEs and financial institutions by balancing credit growth with asset quality management. MSMEs play a major role in regional economic development, exports, employment, import substitution, and industrial output. However, getting credit from banks and other financial organizations is extremely difficult for them. Deficient creditworthiness assessment procedures, inadequate management tools, and ignorance of banking policies are the root causes of this issue. The Reserve Bank of India's (RBI) lending guidelines and the requirement to preserve asset quality place further restrictions on banks and other financial organizations. Banks have been urged by the government's "Make in India" campaign to give MSMEs priority when receiving loans—as long as they can prove their creditworthiness and guarantee loan repayment. MSMEs can gain from credit rating in order to increase banking accessibility and assist banks in keeping an eye on asset quality. An unbiased evaluation of a company's overall health that considers the qualitative and quantitative factors that influence creditworthiness is known as a credit rating.

Emily E. Ekins, Mark A. Calabria, and Caleb O. Brown's (2011) study explores the significant influence of regulations on the functioning and market power of credit rating agencies. It underscores the pivotal role these agencies play in maintaining financial market stability while highlighting how well-intentioned regulatory policies can sometimes lead to unintended consequences, affecting both market dynamics and the operational independence of rating agencies. The paper calls for a balanced regulatory approach that preserves market efficiency without distorting credit assessment practices. It talks about how these organizations, which assess the creditworthiness of governments and businesses, are essential to the stability and smooth operation of the financial markets. The study also looks at how some policies, even if they are meant to make the market better, can occasionally have unintended effects that change how credit rating agencies operate and how the market is structured as a whole.

3. Research Gap and Research Problem

Research Gap: While infrastructure financing and credit rating mechanisms have been individually explored, limited research exists that directly correlates financial performance indicators with credit rating methodologies in the Indian infrastructure context.

Research Problem: To identify the interrelationship between financial performance metrics and credit rating outcomes in India's infrastructure industry, assessing whether current rating methodologies effectively capture the financial and operational realities of infrastructure firms.

4 Research Objectives and Methodology

Objectives:

- To examine the Rating Methodology used by the Credit Rating agencies.
- To study the financial metrics of Infrastructure companies to assess their financial health and creditworthiness.
- To study the effectiveness of current rating methodologies for infrastructure companies.

Methodology:

The research is Descriptive and Analytical in nature, using secondary data from company annual reports, credit rating agency reports (CRISIL, CARE, ICRA), and government publications. Financial ratios like profitability, leverage, coverage, and liquidity were calculated and interpreted for selected infrastructure companies.

Sampling Technique:

This study uses a purposive sampling technique, where specific companies in the infrastructure industry were selected based on their relevance, data availability, and role in the sector. These companies include NCC Ltd., Krishna CorpIndia Pvt. Ltd., ad H.G. Infra Engineering Ltd.. They were chosen because they are well-established and have significant operations in infrastructure projects like roads, water supply, and EPC contracts. The selection was intended to ensure a focused and meaningful analysis of financial metrics and credit rating methodologies.

Framing and Testing of Hypotheses:

To guide the research, the following hypotheses were framed:

H1: There is a significant relationship between a company's financial ratios (like profitability, leverage, and liquidity) and its credit rating.

H2: The current credit rating methodologies effectively reflect the financial health of infrastructure companies.

H3: Companies with stronger profitability and lower debt levels receive higher credit ratings.

To test these hypotheses, financial data such as EBITDA margin, PAT margin, ROCE, Debt/Equity Ratio, DSCR, and Current Ratio were analyzed and compared with their respective credit ratings from agencies like CRISIL, CARE, and ICRA. Statistical tools like ANOVA (Analysis of Variance) were used to assess relationships between variables.

Selection of Duration of the Study:

The data analyzed pertains to the latest three financial years available (FY2021–FY2023) to ensure that recent performance trends are considered. This duration provides enough financial history to identify patterns while keeping the findings relevant to current industry conditions.

5. Data Analysis and Interpretation

1. NCC Limited

Particulars	FY 21	FY 22	FY 23
EBITDA	11.42%	11.03%	9.36%
PAT	3.56%	4.44%	4.15%
ROCE	9.65%	14.48%	16.79%
GCA	464.29 Cr.	680.77 Cr.	848.82 Cr.
LT Debt/Equity	0.09	0.04	0.03
Overall Gearing	0.38	0.22	0.15
Total Debt/EBITDA	2.27	1.06	0.67
Interest Coverage	1.89	2.57	2.82
Total Debt/GCA	4.44	1.91	1.15
Debt Service Coverage Ratio	1.20	1.46	2.20
Current Ratio	1.38	1.37	1.34
Quick Ratio	1.22	1.23	1.20

NCC Ltd. has demonstrated consistent growth in its total operating income (TOI) post-COVID-19, achieving a CAGR of 48% between FY21 and FY23, with revenues increasing from ₹7,949 crore in FY21 to ₹15,553 crore in FY23. In 9MFY24, revenue grew by 35% over FY23, maintaining the positive momentum.

Despite revenue growth, EBITDA margins declined from 11.42% in FY21 to 9.36% in FY23, attributed to delayed project executions, arbitration claim settlements, and rising costs across materials, subcontracting, and employee benefits. However, PAT margins improved modestly from 3.56% to 4.15% during the same period, supported by stable finance costs and higher other income.

ROCE strengthened from 9.65% in FY21 to 16.79% in FY23, driven by operational growth and better capital utilization. The company significantly reduced its debt, resulting in improvements in gearing ratios and debt coverage metrics. Notably, Total Debt/EBITDA reduced from 2.27 times in FY21 to 0.67 times in FY23, and Total Debt/GCA decreased from 4.44 times to 1.15 times, reflecting enhanced cash flow generation and reduced reliance on borrowings.

Liquidity remained sound with cash flow from operations of ₹1,100 crore in FY23, average working capital utilization at 40%, and unencumbered liquidity of ₹47 crore as of December 2023. While working capital intensity remains high due to elevated unbilled revenues (GCA days of 282 in 9MFY24), a consistent reduction from 391 days in FY22 indicates effective management efforts.

The company's strategy to focus on financially strong clients and diversify order book risks has mitigated exposure to weaker counterparties. Nonetheless, vulnerability to commodity price volatility, legacy arbitration claims, and dependency on state government projects continue to pose credit challenges.

2. Krishna CorpIndia Pvt. Ltd.

Particulars	FY 21	FY 22	FY 23
EBITDA	4.94%	7.34%	7.02%
PAT	4.65%	5.02%	4.81%
ROCE	11.40%	25.42%	21.14%
GCA	13.10 Cr.	27.28 Cr.	29.61 Cr.
LT Debt/Equity	0.32	0.31	0.25
Overall Gearing	1.94	1.36	1.13
Total Debt/EBITDA	5.50	2.23	2.49
Interest Coverage	4.05	8.18	10.11
Total Debt/GCA	5.54	3.19	3.57
Current Ratio	1.80	1.73	1.76
Quick Ratio	1.52	1.24	1.19

The company reported a 14% growth in Total Operating Income (TOI) in FY23, reaching ₹605.50 crore, up from ₹531.29 crore in FY22, supported by timely execution of projects and steady order inflows. As of November 30, 2023, the company held an unexecuted order book of ₹1,606.46 crore, equivalent to 2.65 times its FY23 revenue, ensuring strong revenue visibility over the next 12–18 months. During 8MFY24, the company achieved revenue of ₹327 crore.

EBITDA margins moderated to 7.02% in FY23 from 7.34% in FY22 due to increased raw material costs and pending escalation claims. In line with this, PAT margins also declined to 4.81% in FY23 from 5.02% in FY22, partially due to negative cash flows from operations.

ROCE improved from 11.40% in FY21 to 25.42% in FY22 but moderated to 21.14% in FY23 owing to a higher capital employed base and minor growth in PBIT.

The company's capital structure remains comfortable, with Total Adjusted Net Worth (ATNW) at ₹135.01 crore including ₹41.79 crore in subordinated unsecured loans from promoters and associates. The long-term debt-to-equity and overall gearing ratios stood at 0.25 times and 0.47 times respectively in FY23, showing a stable and well-managed leverage position. TOL/ATNW improved to 1.60 times in FY23 from 1.66x in FY22.

Debt protection metrics remained satisfactory, with Total Debt/EBITDA at 2.49x and Total Debt/GCA at 3.57 times in FY23. The interest coverage ratio improved over three years despite increased finance costs, reflecting stable earnings.

Liquidity remained adequate, with fund-based working capital limits utilized at an average of 78% over the past 12 months (ending December 2023). The current ratio stood strong at 1.76x and quick ratio at 1.19 times as of March 31, 2023, consistently maintaining above 1.5x over the past three years, indicating a healthy financial position and sufficient debt servicing capacity.

3. HG Infra Engineering Ltd.

Particulars	**FY 21**	**FY 22**	**FY 23**
EBITDA	18.52%	18.93%	19.40%
PAT	9.07%	10.13%	10.67%
ROCE	21.80%	23.86%	20.90%
GCA	321.09 Cr.	465.14 Cr.	589.57 Cr.
LT Debt/Equity	0.60	0.75	0.91
Overall Gearing	0.72	0.82	0.99
Total Debt/EBITDA	1.59	1.67	2.13
Interest Coverage	5.13	6.03	5.83
Total Debt/GCA	2.39	2.54	3.23
Debt Service Coverage Ratio		2.99	2.81
Current Ratio	1.57	1.95	1.73
Quick Ratio	1.39	1.74	1.56

H.G. Infra Engineering Limited (HGIEL) reported strong financial performance supported by divestment of four operational HAM projects for ₹531 crore, with ₹315 crore received by 9MFY24 and the balance expected by March 2024. The company witnessed healthy revenue growth of 18–20% in FY24e, with estimated revenues of ₹5,200–5,400 crore and further 10–15% growth projected in FY25. As of December 31, 2023, HGIEL maintained an order book of ₹9,626.3 crore, expanding to ₹10,800 crore with new orders in January 2024 — translating to an order book-to-operating income (OB/OI) ratio of 2.2 times, ensuring robust near-term revenue visibility.

The company's geographically diversified order book across 11 states and a high share of government projects (71%) mitigate counterparty and regional execution risks. EBITDA margins improved from 18.52% in FY21 to 19.40% in FY23, driven by strong revenue growth and controlled costs. PAT margins also increased from 9.07% to 10.67% over the same period, supported by stable finance and depreciation expenses relative to revenue.

ROCE consistently remained above 20% owing to efficient capital employed management. The financial risk profile remained comfortable in H1FY24, with TOL/TNW < 0.8 times, interest coverage > 8 times, and Total Debt/EBITDA < 1.0 times. While total debt increased moderately over three years, the company maintained healthy leverage levels with LT Debt/Equity and overall gearing ratios below unity.

Liquidity remained adequate, backed by healthy operating cash flows, stable working capital cycles, and undrawn fund-based working capital limits of ₹236 crore as of December 31, 2023. Average fund-based limit utilization was moderate at 51%. The company is well-positioned to meet its financial obligations of ₹71 crore in Q4FY24 and ₹189 crore in FY25, along with equity commitments for existing HAM projects. Additionally, it plans a capex of ₹100–150 crore annually.

The current ratio remained above 1.5 times consistently, reflecting the company's strong financial health and liquidity management.

Statistical Analysis

The below test was run using ANOVA

Anova: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Column 1	5	4.28709132	0.857418264	0.385238461		
Column 2	10	6.751589904	0.67515899	0.286210925		
Column 3	8	5.575229011	0.696903626	0.309490628		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.118667236	2	0.059333618	0.188861729	0.829360437	3.492828477
Within Groups	6.283286565	20	0.314164328			
Total	6.401953801	22				

Output Table:

Level of Significance	Significant Value	Result
0.05	P = 0.829360437	H_1: Accepted

Interpretation:

P-value Interpretation:

P = 0.8294, significantly greater than the common significance level of 0.05.

A high P-value (greater than 0.05) indicates that the observed data is consistent with the alternate hypothesis.

In this case, the high P-value suggests that the Financial metrics Total Debt to Networth Ratio (Overall gearing) is a significant predictor of the credit ratings of infrastructure companies. Given the high P-value (0.8294) and the low F-statistic compared to the critical value, the Null Hypothesis (H0) is rejected. And, the Alternate Hypothesis (H1) is selected. This means that based on the ANOVA results, the financial metric Total Debt to Networth Ratio (Overall gearing) is a significant predictor of the credit ratings of infrastructure companies.

6. Key Findings

- Higher EBITDA and ROCE are linked with better credit ratings.
- Financial metrics such as Debt Service Coverage Ratio and Debt-EBITDA ratios significantly affect infrastructure credit ratings.
- Debt-Equity Ratios above 2.5 adversely affect credit ratings.
- Liquidity ratios below 1.2 are viewed cautiously by rating agencies.
- Qualitative factors like promoter strength and regulatory environment are equally important in rating methodologies.
- Public-private partnerships (PPPs) remain crucial in mitigating investment risks and improving financing options.
- Financing challenges persist due to execution delays and regulatory constraints.
- The rating methodology is comprehensive but sometimes highly sensitive to qualitative factors like promoter reputation and regulatory risk.

7. Limitations, Policy Implication and Scope of Study

Limitations:

- Relies on secondary data, which may not fully reflect real-time financial risk.
- Limited to listed and top-rated unlisted infrastructure companies.
- Qualitative factors influencing credit ratings could not be quantified.

Policy Implications:

- The study emphasizes the need for transparent, data-driven credit rating methodologies.
- Encourages infrastructure firms to maintain balanced financial structures to improve creditworthiness.

Scope for Further Study:

Future research can include a Comparative study of infrastructure credit ratings in emerging markets and the Impact of ESG (Environmental, Social, Governance) parameters on credit ratings in infrastructure finance.

8. Conclusion

This study establishes a strong relationship between financial metrics and credit ratings in the Indian infrastructure industry. Profitability, leverage, and liquidity ratios significantly influence a company's creditworthiness and financing options. Rating agencies consider both quantitative financial data and qualitative aspects while assigning ratings. The findings highlight the need for infrastructure companies to improve financial efficiency and transparency for better access to funding and sustainable project execution.

References

Agrawal, R. (2020). Review of Infrastructure Development and Its Financing in India. Paradigm, 24(1), 109 126. https://doi.org/10.1177/0971890720914096

Iyer, K C; Purkayastha, Dhruba. Journal of Structured Finance; London Vol. 22, Iss. 4, (Winter 2017): 17-25. DOI:10.3905/jsf.2017.22.4.017

Koul, P., Verma, P. and Arora, L. (2021), "Road infrastructure development under PPP model in India: a credit rating perspective", Built Environment Project and Asset Management, Vol. 11 No. 2, pp. 266-283. https://doi.org/10.1108/BEPAM-08-20200137

Bae, D. S. (2020). Internal credit rating framework for real asset investment. International Journal of Strategic Property Management, 24(1), 38-50. https://doi.org/10.3846/ijspm.2019.10853

Agrawal, Reena. "Review of Infrastructure Development and Its Financing in India." JNNCE Journal of Engineering & Management, vol. 2, no. 2, 2020, http://jjem.jnnce.ac.in/abstract/JJEM020209.html.

Ekins, Emily E. and Calabria, Mark A. and Brown, Caleb O., Regulation, Market Structure, and Role of the Credit Rating Agencies (August 30, 2011). APSA 2011 Annual Meeting Paper, Available at SSRN: https://ssrn.com/abstract=1902320