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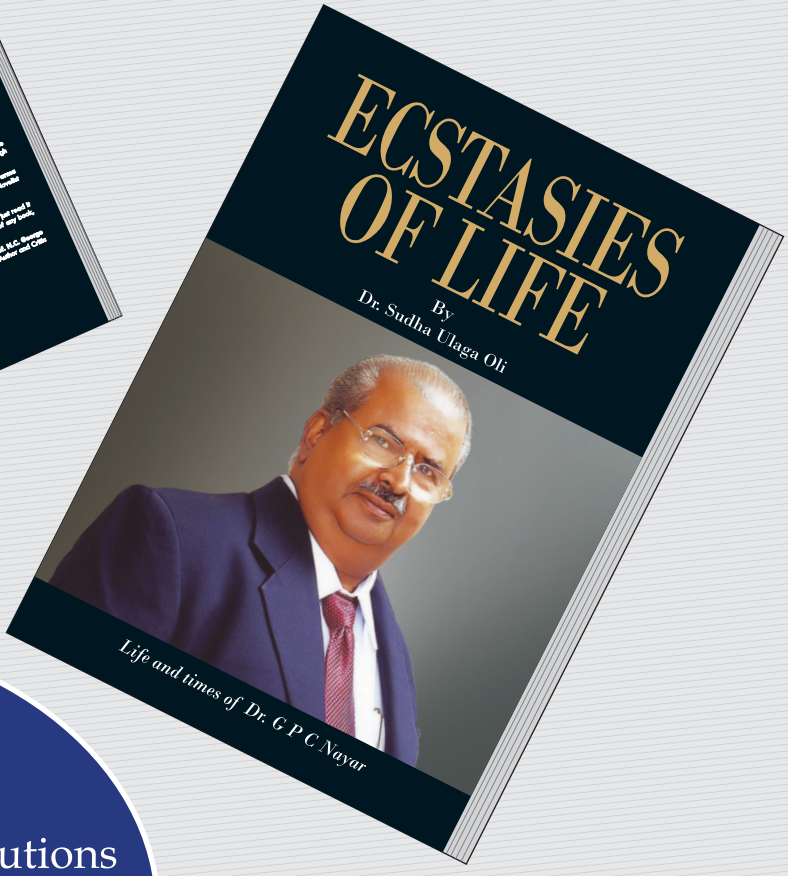
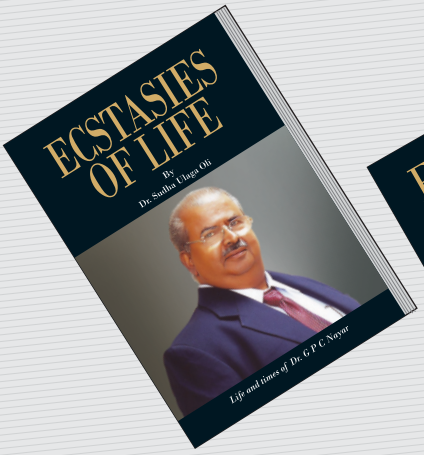
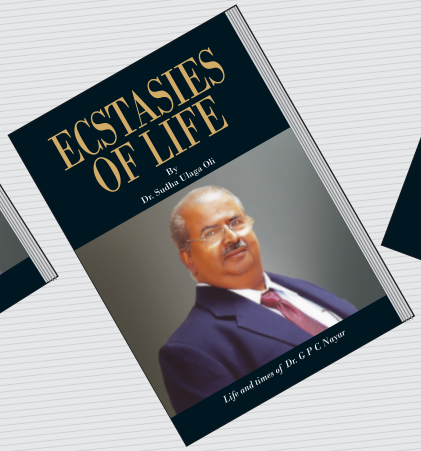


Here's an entrepreneur
who has created
some excellent academic institutions
in an unfriendly environment.
It is a saga of trials and tribulations
in an extremely readable manner
by a consummate
writer in English.





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Contents

January - March 2022, Vol. XIX, Issue No. 1

Articles

Chairman's Overview

The popular quote by mathematician John Allen Paulos "Uncertainty is the only certainty there is, and knowing how to live with insecurity is the only security." seems to be the defining sentiment of our times. We began the year on a hopeful note, with predictions of economic recovery and the end of the pandemic in sight. Then, however, the Covid-19 Third Wave came and went with higher infection rates but lower severity of symptoms. Experts predict that the Fourth Wave will hit India by June 2022 but expect that the higher proportion of the vaccinated and protective immunity in the Indian population will keep the situation manageable.

The unexpected announcement of war in Ukraine, just as we are overcoming the pandemic, has shocked the world. The global community quickly reacted to Russia's aggression by announcing new sanctions and tightening existing ones. The economic and humanitarian outcomes of the war will be profound and will be in direct proportion to the duration of the conflict. Commodity and energy prices will spiral upwards, increasing inflationary pressure and supply chain breakdowns. Again, the worst affected are expected to be the poorest households as the significant share of their expenditure is for fuel and food staples. The impact on the Indian economy can be from direct trade relations with both the warring countries or indirect due to the overall repercussions of the war on the global economic climate. Russia has been an important strategic and trade partner for India, and India is likely to face a diplomatic fallout from other allies if it remains neutral regarding the war.

Interestingly, this is perhaps the first time the business world is also entering into the condemnation of the aggressor by withdrawing and restricting their services and operations in Russia. The SWIFT network, Mastercard, Visa, energy giants BP, Shell and ExxonMobil; tech biggies such as Amazon, Meta, Apple, and Microsoft; Accenture, Ernst and Young, automakers Ford, Toyota, Volkswagen, and GM; Boeing, Airbus, Maersk, McDonald's, Burger King, Ikea and H&M are some of the big names that have been quick and decisive in their pullout strategies.

With the private sector entering the fray, it has effectively changed the way wars will be fought in the future. Consumers expect businesses to be accountable global citizens, and increasingly, consumers and employees demand that the companies they buy from and work for take decisive actions that reflect the values and ideals they communicate through their brands. As business stakeholders, we need to remember that every action and decision is being interpreted by consumers and contributes to long-term trust and brand identification.

It will do good to keep these words by the IMF Managing Director Kristalina Georgieva in mind as we go forward this year, "We live in a more shock-prone world, and we need the strength of the collective to deal with shocks to come."

With that note, we wish our readers an enriching and informative experience.

Dr. G. P. C. NAYAR
Chairman, SCMS Group of Educational Institutions.

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Editors

Editorial Board

Editorial

The Covid pandemic taught us to look within ourselves and be self-reliant. As a result, being local was the buzzword as shipments and cargo transfers tightened. In this context, the findings of one of the studies regarding the relationship between consumer ethnocentricism and country of origin can be implemented to improve sustainable socio-economic development.

Covid forced many people to adopt online shopping. However, it was difficult for marketers to identify key motivators in this highly competitive market. A four-factor scale showing good psychometric properties has been developed in one of the papers to help e-retailers understand consumer motivations behind online and offline shopping.

Another study in the area of online retailing has made an effort to rank Indian fashion e-retailers through the right Search Engine Optimisation tools. These results were further validated by using the PROMETHEE approach. The study provides relevant implications for both digital marketing practitioners and researchers.

A scale to measure the intellectual and emotional health of people is the need of the hour, especially after the onslaught of Corona Virus disease. The reading of the scale presented in one of the articles would doubtlessly help individuals be proactive in life with suitable, sustainable interventions. Various perils of psychological disorders can be contained with properly developed tools.

Such tools can also help in talent management and retention as work-life balance matters the most for productivity. Another such study has tried to identify the factors associated with talent management that impact employee retention. Even when studies are vastly being conducted on retention, especially after the 'great resignation', studies are also on to decode Employee Voice Behavior. The issue presents a study that integrates Employee Voice Behavior, Psychological Contract and Employee Value Proposition in the light of the regulatory focus theory.

Peter L Bernstein, a noted economist and author, said, "Risk and time are opposite sides of the same coin, for if there is no tomorrow, there would be no risk." As such, liquidity risks have gained much attention, and the third study has tried to estimate risk on the basis of data obtained from various banks over a period of 17 years. Another study that examined momentum profitability and its sources in the Indian equity market documented that the Fama-French profitability model is superior to the capital asset pricing model.

The pandemic badly affected the Indonesian dairy industry due to the low level of economic resilience of the dairy farmers. The author used mathematical modelling to find solutions to strengthen and upgrade the dairy farmers' value chain, thereby improving their bargaining power and making them more resilient to economic shocks.

This issue has, in one way or other, some connection to Covid 19. Let us wait for the world to rise again in full throttle to a day with no fear of Covid.

Dr. Radha Thevannoor

Measuring Intellectual and Emotional Health during COVID-19 Pandemic: Scale Development and Validation

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Abstract

Coronavirus disease (COVID-19) has proven itself a deadly pandemic and has not spared a single life on this planet. Every individual is bearing the brunt of this pandemic to a great extent in every possible way. The world is entering into the new normal where people have started living with the precautions. However, several stressors that emerged during COVID-19 are leaving not just a short term but also a long-term impact on the intellect and emotions of every single person. Measurement of intellectual and emotional health has become the need of the hour and will be very useful for analysing the effect of stress due to COVID-19, which will eventually help everyone identify and practice their coping strategies. The current study aims to develop and validate a scale for measuring the intellectual and emotional health of people. The data was collected from 364 respondents using convenience sampling.

The validated scale has a total of 21 items, of which five items are for measuring intellectual health and 16 items for measuring emotional health. In addition, behaviour indicators identified during the research for both health types were categorised into eustress and distress.

The developed scale can be useful for working and non-working individuals to understand their level of emotional and intellectual health and be proactive in protecting themselves from the continuous pain of depression, anxiety, or the tendency to engage in self-harm behaviours even after the COVID-19 era gets over.

Keywords: *COVID-19, intellectual health, emotional health, scale development, scale validation, eustress, distress.*

1. Introduction

In January 2020, the World Health Organization (WHO) declared a worldwide public health emergency due to the health impacts caused by Coronavirus Disease (COVID-19). The global pandemic was accompanied by psychosocial challenges for – working professionals (meeting the bare ends, staying at home and managing office work from home (Meyers, 2020)), students (schools were closed and hence no face to face interaction with teachers and friends, outdoor activities cancelled (Fegert et al., 2020)) and homemakers (increased domestic burdens due to lockdown and handling the stress of family members (Lebus et al., 2020)). After the first wave of COVID-19, the world has also witnessed the second wave in 2021, in which the mortality rate rose by 40% (Firstpost, 2021). The Omicron variant of COVID-19, which emerged in November 2021, accounts for the third wave. However, it's impact was less severe than its previous versions.

Prolonged uncertainty, restrictions on personal freedom, growing financial insecurity, risk of psychiatric illness and emotional isolation (Pfefferbaum & North, 2020) occurred due to the COVID-19 pandemic (referred to as pandemic here onwards), which has enhanced the stress level, depression and anxiety of people (Ryff & Singer, 1998; Lee, 2020), which resulted into poor health of individuals especially mental health (Ganga et al., 2014; Özdin & Bayrak Özdin, 2020).

Mental health has been considered as the fourth highest-ranking health concern after HIV, oral health and diabetes (Gamm et al., 2010). Although numerous psychometric scales are available for measuring mental health (Shedler et al., 1993), one cannot easily recognize the symptoms of poor mental health. Often, it becomes too late to understand the state of mental health, which often results in mental and emotional breakdown (Stevelink et al., 2019). Since its inception in the literature, mental health has been considered a single construct without exploring its further dimensions. However, in several studies, emotional and intellectual health is treated as a substitution for mental health, which dilutes the essence of the construct (Toews et al., 2018). Therefore, analysing intellectual and emotional health separately has become crucial, not just to understand the cognitive health aspects but also to assess the overall health of an individual. Therefore, the current study attempts to segregate the emotional and intellectual dimensions of mental health and treat them as two independent constructs.

Intelligence is the ability of an individual to think logically, act decisively, and deal effectively with the environment (Melby et al., 2020). Both intellectual ability (sound retention power, comprehension, reasoning, analyzing, and problem-solving ability) and intellectual disability (limitations in intellectual functioning and adaptive behaviour) (Schalock et al., 2020) are directly associated with the mental health of an individual (Melby et al., 2020; Surjus & Campos, 2014) and hence poor or strong mental health results in poor or strong intellectual health respectively. The available literature records several inventories for measuring the intellectual disability of people (Cummins, 1991; McCallion et al., 2005; Fang et al., 2011). However, we believe that intellectual disability is only one side of the coin; intellectual strength should also be measured. Hence, the available scales do not meet our requirements satisfactorily. Therefore, a psychometric scale is required to measure sound and weak mental health during the pandemic.

The pandemic situation not only demands good intellectual health, but it also expects an individual to develop the ability to manage their emotions and empathize with others' emotions too. During the pandemic, the emotional reactivity of individuals has increased, and emotional regulation has decreased (Fegert et al., 2020). Hence, a need to enhance one's ability to manage and express emotions has emerged due to the pandemic (Pyramid Healthcare, 2019). The dimension of mental health responsible for managing self and others' emotions is known as emotional health (American Psychology Association, 2020).

Although, several scales are available for measuring numerous aspects of emotions (emotional connect, emotional stress, and so on). However, existing scales were developed for specific people and contexts. For instance, the Welch Emotional Connection Screen (WECS) (Hane et al., 2019) is meant for measuring the emotional connection between mother and infant. Most of the research in the field of emotional health is conducted in the nursing and healthcare domain (Tough et al., 2004; Mann, 2005); also, few scales are available for measuring emotional stress in several situations: during pregnancy (Clark, 2000), perceived discrimination (Pavalko et al., 2003), influence of work environment (Chan & Chan, 2004), HIV positive people (Vance, 2006), working people taking care of elderly parents at home (Lee et al., 2001) and emotional health in military organizations (Harms et al., 2013). Based on the above mentioned premise, we can conclude that none of the available scales is suitable for measuring emotional health during the pandemic.

Stress is a response to any situation, like chasing deadlines, unexpected outcomes, the health of family members, occupation demands, natural disasters, by our body and mind. However, no one ever imagined having to face stress due to the pandemic. The stress that emerged due to the pandemic is the major reason behind the variation in intellectual and emotional health.

The construct stress has always been considered negative; however, it may result in positive outcomes also (Folkman & Moskowitz, 2000). Positive outcomes of stress are known as eustress, which results in personal transformation or growth, positive feelings and a healthy state of body and mind. On the contrary, negative outcomes of stress, commonly called distress, result in depression, anxiety, negative feelings and an unhealthy state of body and mind (Lazarus, 1993).

Based on the above discussion, the following research gaps were identified:

There is a dearth of literature giving an empirical understanding of intellectual and emotional health, and there is no dedicated psychometric scale available for measuring them.

COVID-19 pandemic is new to the world, and hence no psychometric scale is available for measuring variations in intellectual and emotional health due to the pandemic.

The above mentioned premise demands to understand and measure intellectual and emotional health during the pandemic, with the help of a psychometric scale. Hence, based on Darwin's (1872) theory of natural selection and emotion, the current study aims at:

1. Developing and validating a scale for measuring intellectual and emotional health during the COVID-19 pandemic.
2. Segregating the behavioural indicators of each health type into eustress and distress.

The subsequent sections of the current study are organized in the following manner – in Section 2, an extensive review of the literature was carried out; in Section 3, hypotheses were developed for testing nomological validity; in Section 4, the methodology was discussed; Section 5 contain discussions and implications of the research; Section 6 highlights the limitations and future research directions; in Section 7, the conclusions from the study are discussed briefly.

2. Literature Review

2.1 Mental health

Mental health, introduced by Clifford Beers in 1908 as a constituent of mental hygiene (Bertoloter, 2008), refers to the way people evaluate their lives based on life satisfaction, lack of depression and anxiety, and positive moods and emotions (Guney et al., 2010). The concept has grabbed the attention of researchers and practitioners since its inception. However, after the outbreak of COVID-19, studies on mental health have gone up multifold. A systematic literature review conducted by Raihan (2021) has identified 840 research papers on 'mental health during COVID-19', reflecting the growing interest of researchers on mental health during the pandemic.

The construct mental health is a bouquet of emotional, psychological and social well-being (Keyes & Lopez, 2002), and hence it affects how people think, feel and behave. People facing mental health issues can easily slip into anxiety, depression, stress (Raihan, 2021), fear, sleep problems (Özdin & Bayrak Özdin, 2020), unhappiness, loss of interest, decreased enjoyment in life and reduced intellectual ability (Surjus & Campos, 2014).

Empirical evidence proves the association between intelligence and the mental health of human beings across all age groups (Wraw et al., 2016). Furthermore, mental health can affect cognitive functioning, which further affects intellectual functioning positively and negatively (Perlmutter & Nyquist, 1990). Several studies have used mental health as a single construct; however, due to the strong ability of mental health to influence the intellectual ability of human beings, we advocate that intellectual health should be considered as one of the dimensions of mental health.

Inability to understand and manage emotions has been considered as one of the major causes of mental health problems (Ruiz-Aranda et al., 2012). Day-to-day experience due to the pandemic has caused variations in thoughts and feelings of individuals, which in turn has affected their emotional state. It later on leaves a long-lasting impression on their mental health (Dua, 1994). The mental state of an individual has the power to control his emotions; hence, the emotional dimension should be studied separately as a constituent of mental health. Therefore, based on the above premise, mental health has been categorised into two dimensions – intellectual health and emotional health.

2.2 Intellectual Health

The dimension of mental health that encourages creativity and a quest for knowledge expansion and skill enhancement is known as intellectual health (Intellectual Health, 2020). Human intellect is the ability to think, be creative, and generate new ideas (Hatamizadeh et al., 2020). Factors responsible for the positive influence on the intellectual health of an individual comprises - family members, home and workplace environment, social media (Klonaridou et al., 2006); social, spiritual, occupational, physical, financial and emotional wellness (Rehman et al., 2020).

An imbalanced life cycle that occurred due to the pandemic has emerged as a major reason for stress. Behaviour indicators like - changes in lifestyle patterns of an individual like watching excessive television or accessing the internet, browsing social media unnecessarily, irritability, impulsiveness, impatience, reduced tolerance for frustration, insensitivity to interpersonal relationships, decrease in altruistic behaviours - place a negative burden on their intellect (Fink, 2016). Negative thoughts, irritability, distributed thinking, mood swings or feeling very low are some other behaviour indicators representing poor mental health during the pandemic.

Whereas certain behaviours indicate positive intellectual health like getting away from screens and reading a book, cultivating hobbies or skills, e-Connect with society, animal assistant therapy (Parshall, 2003) and practising mindfulness (Sangprasert et al., 2019).

Stress and depression often reduce the interest of an individual in gaining knowledge and learning new skills (Stewart et al., 2019) and pose a negative impact on intellectual health. Among the several ill-effects of the pandemic, the worst hit is people's intellectual ability (Mills et al., 2020). Yet, intellectual health is the most underrated dimension of human health. Although WHO has declared intellectual ability as an important health dimension (Carulla et al., 2011), there is still a dearth of research work in this dimension of health (Sheiner, 1991; Vaughan et al., 2007).

2.3 Emotional Health

The emotional health construct for the current research is based on Social and Emotional Learning (SEL) and Emotional Connection Theory (ECT). SEL is the process through which an individual understands and manages emotions (Collaborative for Academic Social and Emotional Learning, 2016, CASEL). ECT believes that the emotional connection is just like opposite poles of the magnet, which attracts two individuals and keep them together (Ludwig & Welch, 2019). Although the ECT concept emerged for a mother-infant relationship, however during the pandemic, it can be used for determining the emotional connection between an individual and his/her family.

Emotion is a perception of the mind that impacts physiological conditions of the body and becomes emotional memory (Ludwig & Welch, 2019). Emotional regulation refers to the capability of human beings to control their own emotion; emotional intelligence refers to the ability of the individual to use and identify emotions constructively, and emotional health refers to individual's characteristics that promote successful adaptation, resilience, command and self-management of emotions (Hendrie et al., 2006). Therefore, emotional health is a combination of emotional intelligence and emotional regulation (Miller, 2020), and it refers to the capability of an individual to understand the self's feelings and emotions along with the feelings and emotions of people who are around them (Joshi et al., 2015; Miller, 2020). During the pandemic, when one is forced to stay with their family or friends, the most influential behavioural indicator of emotion is an attachment with the ones you are staying with.

Unprecedented situations like war or pandemic often result in several long-term emotional problems like loss of personal control, emotional withdrawal, distrust, intrusive memories, intense anger, and hyper-alertness, which demands coping strategies like control of emotions, skills to understand and cooperate with others, self-discipline and development of inner strength. The emotional problems set a high-risk environment for effective emotional health (Elder & Clipp, 1989).

Mental fatigue arising due to the pandemic can enhance negative emotions like sadness, anger/aggression, fear (Berto, 2014), frustration, difficulty with focus, concentration or attention and loss of interest in usually enjoyable activities. On the other hand, staying calm, mindfulness, maintaining social connect, sending someone a message of encouragement, feeling productive are the indicators of balanced emotional health.

2.4 Forms of stress - Distress and Eustress

Stressors are the events or conditions in the environment which causes stress. The frequency and intensity of the stressors can lead to physiological and psychological effects on the human body and mind (Cibrian-Llanderal et al.,

2018). The behavioural response towards the stressors is known as behavioural indicators (Kozusznik et al., 2015).

Some people perceive stress affirmatively and consider it an opportunity to grow. Hence, their performance improves even in a stressful environment (Lazarus, 1993), whereas few cannot handle even mild stress and bear the brunt of all kinds of losses.

The positive perception about stress is termed as eustress, whereas the negative perception is called distress (Bienertova-Vasku et al., 2020). Eustress is a positive, desirable, and advantageous response that can positively affect health (Di Fabio et al., 2018). In contrast, distress is a negative, undesirable and disadvantageous response to a stressor (Branson et al., 2019) and may result in negative outcomes.

Under stressful conditions, the prefrontal cortex (part of the brain responsible for emotions and intellectual ability) becomes highly sensitive to damage and can affect mental (intellectual and emotional) health (Cibrian-Llanderal et al., 2018). Hence, stress that has emerged due to the pandemic has all the capabilities to affect intellectual and emotional health.

A psychologically distressing event that occurs due to the pandemic, which is outside the range of normal experience, will result in trauma (Suedfeld, 1997) which needs immediate attention (Payton, 2009). On the contrary, eustress during the pandemic influences learning effectiveness, productivity, creativity and promotes positive emotions (Shirish et al., 2021). Hence, during the pandemic, it is essential to monitor and measure the intensity of intellectual and emotional health on the scale of eustress and distress.

The combination of health types and stress types results in four quadrants (Fig. 1) viz. intellectual health with eustress, intellectual health with distress, emotional health with eustress and emotional health with distress.

People who consider a stressful environment an opportunity to learn and grow are termed players, whereas individuals who fail to manage stress and become inactive, lazy, and waste their time thinking about the future after the pandemic are considered idlers.

Lower emotional health results in psychological distress, depression and anxiety (Dua, 1994), due to which one is unable to understand and manage their own and others' feelings. The quadrant of people falling in lower value of emotional health is named as plodders. Whereas individuals who can control their thoughts, feelings, behaviour and understand the feelings and mental state of others are considered to be captains.

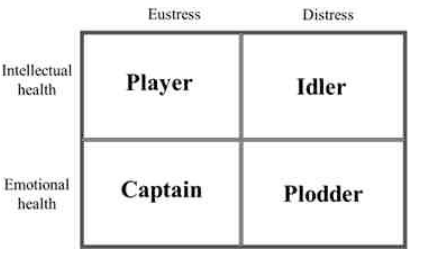

Fig 1. Health and stress matrix

3. Hypothesis Development for Nomological Validity Test

Stress is one of the main reasons behind variation in intellectual and emotional health (Hampel & Petermann, 2006; Li et al., 2016). The psychological response to the pandemic was observed in the form of stress, fear, anxiety and panic (Torales et al., 2020). WHO has also confirmed that the pandemic has increased the stress level of individuals multifold, which has severely affected mental (intellectual and emotional) health (Kaufman et al., 2020).

Continuous stress felt by people may cause strain, and the strain lowers the emotional health of an individual (Dua, 1994). Several studies on work-related stress and its impact on emotional health are available (Dua, 1994; Pflanz & Sonnek, 2002); however, this relationship has not been tested for the stressors that emerged from the pandemic.

The damaging effect of stressful events (like the pandemic) on mental health has been studied extensively (Kadzikowska-Wrzosek, 2012). However, the empirical evidence showing the impact of stress on components of mental health – intellectual health and emotional health – are not available. Hence, in the context of the current research, we propose the following set of hypotheses:

H1: A positive relationship exists between perceived stress and intellectual health.

H2: A positive relationship exists between perceived stress and emotional health.

4. Methodology

*4.1 Instrument development proce*ss

The study constructs – intellectual health and emotional health – were conceptualised through an extensive literature review as suggested by Churchill (1979). The next task is to measure the study constructs by developing a psychometric scale. Hence, the further parts of the study are based on scale

development guidelines proposed by Churchill (1979) and scale improvement techniques suggested by DeVellis (2017) and Hinkin (1998).

4.1.1 Generation of scale items

The item generation method is a sampling of items from the pool of all possible items intended to measure the study construct. A mixed approach including inductive and deductive methodology was used to generate items for the scale (Hinkin, 1998). Under the inductive approach, available literature was scanned, and all possible items explaining the study construct were identified. The indicators obtained through the literature review are shown in Table 1. As this was the first occurrence of a pandemic of this scale, a dearth of literature explaining the effect of the pandemic on intellectual and emotional health was observed, hence researchers' own wisdom based on experience and the knowledge gained by attending several expert sessions during the pandemic were used for generating items for the study, explaining a deductive approach too.

Initially, 24 items measuring intellectual health and 39 items measuring emotional health were generated, which were further scrutinized to remove all kinds of duplicity, ambiguity and double-barrelled items (Hinkin, 1998; DeVellis, 2017).

Table 1. Items generated as a result of literature review

Construct	Definition	Variable	Reference
Intellectual Health	Creativity, innovation and productive activities increase intellectual knowledge. Developing tacit knowledge to face future challenges.	● Creativity & innovation ● Productive Activities ● Tacit knowledge	(McManus, Anderberg and Lazarus, 2007; Nwagbara, 2013; Behl, 2020)
	Enhancing existing skills, building new skills and gaining new knowledge	● Skills ● Knowledge	(Swogger, 2000) (Stewart et al., 2019)
	Environment of family and workplace/ school/ college affects intellectual knowledge	● Family environment	(Klonaridou et al., 2006)
	Use of substance / tobacco /alcohol has adverse effect on intellectual health	● Use of alcohol/drugs/ tobacco.	(Skåtun, 2010)
	Increased level of stress has adverse effect on intellectual health	● Stress	(Karia and Asaari, 2019)
	Wellness indicators like occupational wellness, financial wellness, spiritual wellness and social wellness has significant impact on intellectual health of an individual.	● Occupational wellness ● Financial wellness ● Spiritual wellness ● Social wellness	(Rehman et al., 2020)
Emotional Health	Social isolation (unavailability of people around you), stress in daily life contributes to poor emotional health. Active social life	● Social isolation ● Social support relationships	(Tough et al., 2004; Harms et al., 2013)
	Fear of losing self-esteem and self-identity has a negative impact on emotional health.	● Fear of losing self-identity	(Mann, 2005)
	Work-related stress can increase employee dissatisfaction and lower productivity, which in return causes poor emotional health	● Work-related stress ● Dissatisfaction ● Lower Productivity	(Dua, 1994)

Life transition event (like pandemic) can influence emotional health o f an individual specially women.	• Life transition events	(Weerasinghe and Numer, 2010)
Psychosocial needs, healthy personal relationships, good communication were some key factors responsible for good emotional health.	• Psychosocial needs • Personal relationships • Communication	(Dickson-Swift et al., 2014; Soriano and Cala, 2018)
Emotional dissonance is the outcome of lower work motivation.	• Motivation	(Wegge, van Dick, & von Bernstorff, 2010)
Living circumstances of an individual can be responsible for his/her emotions	• Living circumstances	(Ioannou, Kouta, & Andreou, 2015)
Behavioural and lifestyle factors have impact on emotional health. Positive cultural phenomena can contribute to better emotional health	• Behavioural factors • Lifestyle factors • Cultural phenomena	(Soriano & Cala, 2018)
Chaotic lifestyles can result into poor emotional health	• Lifestyle	(Walker, 2008)
Good physical health	• Physical health	(Friedli and McCulloch, 2005; Gilleard et al., 2005)

4.1.2 Item sorting

After scrutiny, the researchers pinned down 19 items for intellectual health and 32 for emotional health. Then, as suggested by Wagstaff et al. (2015), a panel of experts was constituted, which comprises of two professors (1 Psychology and 1 Business Administration), two research scholars (Business Administration domain) and two doctors. The panel members were asked to check the items, and all the items which were rated poor or confusing were eliminated. Based on the panel decision, an inventory comprising of 11 items for measuring intellectual health and 24 items for measuring emotional health was finalized, which was further used for data collection. This exercise led to study items qualifying the content validity criterion (Bhatnagar, 2020).

4.2 Instrument testing

4.2.1 Measure Purification

The items generated were put in the form of a declarative statement with a mix of both positive and negative worded items to avoid an acquiescence, affirmation, or agreement bias (DeVellis, 2017). A 10-point Likert scale was assigned to the items, ranging from "1= Not at all" to "10 = Completely", for evaluating respondents' intellectual and emotional health. The final questionnaire contains nine questions related to demographic details and 35 scaled items (11 for intellectual health and 24 for emotional health). The items were selected in such a manner that it comprises behavioural indicators of eustress and distress for intellectual and emotional health.

Google Forms were used for data collection, and a convenience sampling approach was followed by sharing the link with LinkedIn contacts (Bhatnagar, 2020) and the personal contacts of researchers. The LinkedIn contacts are spread worldwide and are of various age groups; respondents contacted personally were professionals working with government and private organizations, retired people and students; hence the sample selection meets the randomization criterion. The data collection was carried out in two phases. In phase one, data was collected from a pilot sample for measure purification, and in phase two, data was collected from the sampled population. Data from 170 respondents was collected, and measure purification was carried out.

The objective of measure purification is to check whether the items supposed to measure the theoretical constructs are

actually associated meaningfully with each other, and if not, how to treat such items (Churchill, 1979; DeVellis, 2017). Purification of generated items was carried out in two steps:

- Testing each item for internal consistency

- Determining the underlying factor structure through exploratory factor analysis.

4.2.1.1 Testing items for internal consistency:

Internal consistency is the correlation of each item with the total score (Churchill, 1979), and it also checks the scale for random errors (Pallant, 2007). The score of item-total correlation is used for testing internal consistency (Churchill, 1979; Wang et al., 2019). Before proceeding further, the responses of all negative items in the scale were transformed through reverse scaling so that they do not show poor inter-item correlation with the latent construct.

When tested for item-total correlation, four items were removed from the intellectual health scale as their values were less than 0.4 (standard value). After deleting poor inter-correlated items, the scale was left with seven items having a reliability (Cronbach's alpha) value of 0.732. A similar process was used on emotional health items, which resulted in 16 items with a reliability value (Cronbach's alpha) of 0.844. In both cases, the reliability value exceeds the threshold value of 0.7 (Nunnally & Bernstein, 1994).

4.2.1.2 Determining the underlying factor structure among study items through Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is the technique of data summarization and data reduction (Hair et al., 2009). The aim of performing EFA at this stage is to determine the number of latent constructs and remove the items showing poor association with the latent construct (Churchill, 1979). Before commencing factor analysis, the factorability was tested through (Hair et al., 2009):

1. Kaiser Mayer Olkin (KMO) test
2. Bartlett's Test of Sphericity

All 23 study items were considered for EFA without categorising them on the basis of intellectual or emotional health measures. The result of KMO and Bartlett's Test results are shown in Table 2. Results revealed that all the values are within an acceptable range, and hence EFA could be run on the scale items.

The principal component analysis method was used as an extraction method with Varimax rotation and Kaiser Normalization. Rotation was converged in 5 iterations. Using the eigenvalue criterion, four factors explaining 60% variance were obtained (Pallant, 2007). The result of EFA is shown in Table 3. Items with a factor loading above 0.5 were included; the rest were deleted (Na-Nan & Saribut, 2020). Since a rotated factor matrix explained a more meaningful solution than the initial factor matrix, rotation solution was considered (Hair et al., 2009). Two items of intellectual health got grouped with emotional health items, so they were dropped from the study. After EFA, a total of 16 items measuring emotional health and five items measuring intellectual health were left.

The result of the EFA revealed that for each study construct (intellectual health and emotional health), two second-order constructs were obtained, which represents the eustress and distress component respectively for each study construct.

The resultant factors can be described as:

- intellectual health with eustress (3 items)
- intellectual health with distress (2 items)
- emotional health with distress (8 items)
- emotional health with eustress (8 items)

Table 2. KMO and Bartlett's Test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.	.859
Bartlett's Test of Sphericity	Approx. Chi-Square	1905.998
	df	210
	Sig.	.000

Table 3. Result of Exploratory Factor Analysis

Study Construct	Second-order Construct	Question	Item	Factor Loading (EFA)
Intellectual Health	Intellectual health with eustress	IH3	My family environment is conducive and supports me in upgrading my knowledge and skills during COVID-19 pandemic.	0.742
		IH2	I am satisfied with the efforts put up by me today for upgrading my skills and knowledge.	0.608
	Intellectual health with distress	IH1	I have become more creative now and try my hands on new things like cooking, painting, photography.	0.594
		IH8	I have given up my curiosity to learn new skills and gain new knowledge.	0.671
		IH7	The novel coronavirus disease has stopped the channel of new thoughts and ideas.	0.571
Emotional Health	Emotional health with distress	EH14	The uncertainty, instability and ambiguity of situation due to COVID-19 bring down the agility and enthusiasm.	0.737
		EH2	To reduce the sense of helplessness during COVID-19 I have started losing my temper.	0.735
		EH13	The thought of not living my normal life and uncertainties all around taking away my good night sleep.	0.734
		EH8	I closed the gateway of all emotions except sorrow and unhappiness.	0.699
		EH3	Sense of deprivement and the loss of excitement prevail.	0.668
		EH7	I stopped looking forward to start my day and find my daily routine unexciting.	0.650
		EH6	Social distancing makes me feel lonely and caged.	0.604
	Emotional health with eustress	EH1	The news of COVID-19 made me fearful and apprehensive about almost everything.	0.549
		EH23	COVID-19 pandemic helped me to understand the level of my emotional investment in my family.	0.783
		EH20	I become more mindful of little things that are happening around me.	0.707
		EH18	The sense of gratitude of being alive increases ten folds.	0.682
		EH24	Getting a chance to understand what sharing and caring is all about in true sense.	0.671
		EH21	Being around with my family/friends made the bonding stronger.	0.640
		EH16	My definition of happiness is shifted from 'I' and 'my' to 'we' and 'our'.	0.637
		EH5	COVID-19 pandemic gave me and in-depth understanding, how precious is my happiness.	0.550
		EH22	COVID-19 pandemic gave me and in-depth understanding, how precious is my happiness.	0.550

After measure purification, 21 items were left in the measurement scale. The obtained factors were confirmed using confirmatory factor analysis in the next step of scale development.

4.2.2 Confirmatory Factor Analysis

Once the measures were purified and the scale was refined, the data was then collected from the sampled population (n=194) using the researchers' LinkedIn contacts and personal contacts. A new construct, perceived stress, was also introduced to determine nomological validity. The items for measuring perceived stress were adopted from the perceived stress scale developed by Cohen et al. (1983).

The demographic summary of the sampled population is shown in Table 4.

Table 4. The summary of respondents

Gender	Male – 55% Female – 45%
Country respondent is currently staying	India – 62% USA – 13% Belarus – 9% Hungary – 7% Sri Lanka – 2% Oman – 2% UAE – 2% Kuwait – 2% Uzbekistan – 1%
Age Group	15 – 25 years – 31% 26 – 35 years – 38% 36 – 45 years – 22% Above 46 years – 10%
Occupation	Working in private organizations – 45% Seeking job opportunity – 14% Students - 25% Working in govt organizations – 3% Own business – 8 % and Retired – 5%

Since the data was collected from only a single category of respondents, common method bias becomes a concern for us. The Harman's one-factor test was used to access the common method bias, and since the obtained value of total variance explained (extraction method – principal axis factoring with unrotated solution) was 26.023%, which was far less than 50%; hence it can be claimed that the data set is free from common method bias.

The property of psychometric scales, which enables a group of items to measure only one construct and not the other, is known as unidimensionality. CFA has an advantage over item-total correlation (internal-consistency measure) and EFA that it can test the items for unidimensionality (Gerbing & Anderson, 1988).

A first-order CFA was conducted using IBM AMOS-20. The maximum likelihood estimation method used for computing CFA was consistent with the one proposed by Bentler and Bonett (1980). The factors loadings obtained through CFA are shown in Table 5 under the heading factor loading (CFA). All factor loadings are above the threshold value (0.5); hence they are statistically significant and acceptable (Chawla & Saxena, 2016). However, few R^2 values were found to be very low; in social science research, higher values of R^2 are not a common phenomenon and results with a smaller value of R^2 can also be accepted (Na-Nan & Saribut, 2020).

Table 5. Result of Confirmatory Factor Analysis

Study Construct	Second-order Construct	Question	Factor Loading (CFA)	R^2
Intellectual Health	Intellectual health with eustress	IH3	0.834	0.695
		IH2	0.660	0.436
		IH1	0.689	0.474
	Intellectual health with distress	IH8	0.555	0.308
		IH7	0.876	0.767
Emotional Health	Emotional health with distress	EH14	0.772	0.596
		EH2	0.744	0.553
		EH13	0.762	0.580
		EH8	0.730	0.533
		EH3	0.673	0.453
		EH7	0.654	0.428
		EH6	0.547	0.299
		EH1	0.525	0.276
	Emotional health with eustress	EH23	0.788	0.621
		EH20	0.743	0.552
		EH18	0.713	0.509
		EH24	0.681	0.464
		EH21	0.717	0.514
		EH16	0.645	0.416
		EH5	0.572	0.327
		EH22	0.549	0.301
Perceived Stress	Perceived Stress	PS1	0.538	0.48
		PS2	0.780	0.66
		PS3	0.559	0.40
		PS4	0.665	0.59
		PS5	0.757	0.63
		PS6	0.732	0.69
		PS7	0.624	0.64
		PS8	0.750	0.64
		PS9	0.531	0.47
		PS10	0.700	0.54

The overall model fit indices for CFA were measured on three categories – absolute fit, incremental fit and parsimonious fit (Na-Nan & Saribut, 2020). As shown in Table 6, all model fit indices were within the acceptable limit.

Table 6. Model fit indices

Category	Model fit indices	Obtained Value	Standard values or acceptable range	Reference
Absolute fit	Chi-square (χ^2)	362.516		Bentler and Bonett, 1980; Fornell and Larcker, 1981
	df	183		Bentler and Bonett, 1980
	χ^2/df	1.981	0-2	Hair et al., 2009
	Root Mean Squared Residual (RMR)	.017	<0.02	Jöreskog and Sörbom, 1989
	Root Mean Square Error of Approximation (RMSEA)	.048	0.08-0.5	Hair et al., 2009
Incremental fit	Goodness of fit indices (GFI)	.858	0 -1	Jöreskog and Sörbom, 1989
	Normed Fit Index (NFI)	.917	>0.90	Hair et al., 2009
	Comparative Fit Index (CFI)	.989	>0.95	Hair et al., 2009
Parsimonious fit	Adjusted Goodness-of-Fit Index (AGFI)	.921	>0.90	Jöreskog and Sörbom, 1989
	Parsimonious Normed Fit Index (PNFI)	.912	>0.90	Hair et al., 2009

4.3 Validity and reliability of the scale

The hypothesized model for the study comprises three constructs, intellectual health, emotional health and perceived stress. To address the issue of multicollinearity, the Variance Inflation Factor (VIF) of all the items was computed. The result reveals that the VIF value for all the items (Table 7) is within the acceptable limit, i.e. < 3 (Hair et al., 2009).

In scientific research, validity ensures the ability of the scale to measure what it is meant to measure (Nunnally & Bernstein, 1994). In the scale development process, two types of validity need to be determined – content validity and construct validity (DeVellis, 2017). The content validity represents that the items used for measuring a construct are perfectly sampled and represent the domain of the respective construct. We have tested scale items for content validity through a panel of experts, as discussed in section 4.1.2.

The construct validity determines the relationship of an item with other items. According to Campbell and Fiske (1959) and Churchill (1979), the construct validity of the scale can be ensured when these two criteria are satisfied:

1. All the items measuring a particular construct are strongly correlated with each other, known as convergent validity;
2. The group of items measuring one construct shows poor correlation with other study constructs, known as discriminant validity.

The construct validity (convergent and discriminant) is determined using the approach suggested by Fornell and Larcker (1981). EFA resulted in four factors which were confirmed by CFA. According to Fornell and Larcker (1981), the value of AVE (Average Variance Extracted) for all study constructs should be 0.5 in order to possess convergent reliability. AVE values for the study construct, shown in Table 7, reflects that obtained values of AVE for all four study constructs is equal (or close) to 0.5; hence it can be claimed that the scale passes the criteria of convergent validity.

Table 7. Convergent Validity and Composite Reliability

Study Construct	Second-order Construct	Question	Factor Loading (λ)	Variance Inflation Factor (VIF)	λ^2	AVE*	1 - λ^2	CR** = $(\Sigma\lambda)^2$ / $(\Sigma\lambda)^2 + \Sigma\ 1-\lambda^2)$
Intellectual Health	Player	IH3	0.834	1.906	0.696	**0.535**	0.304	**0.774**
		IH2	0.660	1.751	0.436		0.564	
		IH1	0.689	2.330	0.475		0.525	
	Idler	IH8	0.555	1.706	0.308	**0.537**	0.692	**0.689**
		IH7	0.876	1.695	0.767		0.233	
Emotional Health	Captain	EH14	0.772	1.372	0.596	**0.464**	0.404	**0.848**
		EH2	0.744	1.435	0.554		0.446	
		EH13	0.762	1.778	0.581		0.419	
		EH8	0.730	1.807	0.533		0.467	
		EH3	0.673	1.604	0.453		0.547	
		EH7	0.654	1.796	0.428		0.572	
		EH6	0.547	2.104	0.299		0.701	
		EH1	0.525	1.458	0.276		0.724	
	Plodder	EH23	0.788	2.292	0.621	**0.463**	0.379	**0.832**
		EH20	0.743	2.541	0.552		0.448	
		EH18	0.713	1.710	0.508		0.492	
		EH24	0.681	2.067	0.464		0.536	
		EH21	0.717	1.878	0.514		0.486	
		EH16	0.645	2.541	0.416		0.584	
		EH5	0.572	1.639	0.327		0.673	
		EH22	0.549	2.565	0.301		0.699	
Perceived Stress	Perceived stress	PS1	0.538	1.710	0.289	**0.449**	0.711	**0.889**
		PS2	0.780	1.067	0.608		0.392	
		PS3	0.559	1.878	0.312		0.688	
		PS4	0.665	2.541	0.442		0.558	
		PS5	0.757	1.639	0.573		0.427	
		PS6	0.732	2.565	0.536		0.464	
		PS7	0.624	2.129	0.389		0.611	
		PS8	0.750	1.609	0.563		0.438	
		PS9	0.531	2.941	0.282		0.718	
		PS10	0.700	1.377	0.490		0.510	

*AVE - Average Variance Extracted
**CR - Composite Reliability

In the context of this research, discriminant validity can be described as the degree to which the items measuring intellectual health with eustress show poor or negative correlation with other constructs of the study (Churchill, 1979).

Fornell and Larcker (1981) have suggested that squared correlation value (also known as Maximum Shared Variance (MSV)) between study constructs should be less than AVE for attaining discriminant validity. The inter-item correlation values are obtained with the result of CFA.

The result of MSV for the study is shown in Table 8; when compared with AVE, the findings reveal that all MSV values are less than AVE, and hence the scale qualifies the criteria of discriminant validity (Fornell & Larcker, 1981).

Table 8. Discriminant Validity

			Correlation	Squared Correlation (MSV*)
Captain	<-->	Player	-0.171	0.029
Player	<-->	Idler	0.435	0.189
Plodder	<-->	Idler	0.413	0.171
Captain	<-->	Plodder	-0.234	0.055
Captain	<-->	Idler	-0.319	0.102
Plodder	<-->	Player	0.624	0.389
Captain	<-->	Perceived Stress	0.385	0.148
Player	<-->	Perceived Stress	0.528	0.279
Plodder	<-->	Perceived Stress	0.605	0.366
Idler	<-->	Perceived Stress	0.414	0.171

Based on the guidelines provided by Hinkin (1998), a nomological network was developed to hypothesize the relationship between stress and health – intellectual and emotional (Wang et al., 2019). The items used for examining nomological validity are shown in Table 7. Two hypotheses were proposed for measuring nomological validity. Correlation analysis was conducted for testing them (Wang et al., 2019). The result of correlation analysis indicates that the average score of perceived stress has a positive and significant correlation with intellectual health ($r = 0.59$, $p<0.05$). Also, the correlation between perceived stress and emotional health is also positive and significant ($r= 0.664$, $p<0.05$). Hence, both H1 and H2 are supported. Based on the above results, the nomological validity of the intellectual and emotional health scale is empirically supported.

Reliability ensures the consistency of the scale (DeVellis, 2017). There are several approaches available for computing the reliability of the scale. The most popular and common approach is Cronbach's alpha. Due to its conceptual and empirical limitations, such as its focus on scaling of the person rather than the object, it is not an absolute measure of reliability (Davcik, 2014). For determining the reliability of a newly constructed scale, it is advisable to use the composite reliability (CR) approach proposed by Werts et al. (1974).

Results of CR, shown in Table 7, reveal that reliability values for each study construct are close or above 0.7, which is the minimum cut off for accepting reliability results (Hair et al., 2009), hence the scale qualifies the reliability criterion.

Since the scale has successfully passed through all the stages of scale development and validation process, the final version contains 21 items measuring an individual's intellectual and emotional health during the pandemic.

5. Discussion and Implication

5.1 Theoretical Implications

This study elaborates mental health construct by defining its dimensions – intellectual health and emotional health. Furthermore, the current study adds numerous perspectives to the health literature in the following way:

1. The study defines and develops the concept of intellectual health, which was almost ignored by previous researchers. In a few studies published earlier, we have observed that low intelligence was considered as mental retardation or intellectual disability (Carulla et al., 2011). The current study attempts to establish intellectual health as a component of mental health that varies from low to high. And low mental health does not signify the absence of intelligence or mental retardation.
2. The second study construct – emotional health – was not new; it has been defined by several researchers earlier also. However, the definition of the concept was limited to a theoretical perspective only. Our study is the first of its kind to address the concept empirically and develop a scale for measuring it.
3. Since stress is the source of health-related issues hence, after defining the concept, the current study also established a relationship between perceived stress and health types considered (intellectual and emotional).

5.2 Practical Implications

There are multi-fold advantages of developing a scale for measuring intellectual and emotional health during and after the post-pandemic era. The pandemic has brought many threats to normal lives. To name a few, poor economic growth, job loss, scarcity of basic and essential amenities, fear of infection, lack of in-person contact with colleagues/friends/batch mates, frustration and boredom (Wang et al., 2020). Hence, an effective strategy is required to be developed by each individual in the family and society on a large scale to cope with the stress (Fessell & Cherniss, 2020) and stay healthy even during the time of crisis. Testing the emotional health of an individual helps in diagnosing whether the emotions are asymptomatic or symptomatic in nature, and accordingly, an individual can take preventive and corrective measures. The scale explicitly developed in the study for measuring emotional health will be a stepping stone in diagnosing peoples' emotional health and understanding the severity of the situation to decide a cure for many emotional ailments.

The scale developed would surely be very helpful for parents and teachers to measure the intellectual health of the students to decide a further plan of action depending upon the diagnosis with regard to the category of stress (eustress or distress). Post pandemic effects are also expected not to show a very rosy picture, and the situation of instability and uncertainty is going to die-hard. The developed scale can also be used by working and non-working individuals to understand their individual level of intellectual and emotional health and be proactive in preventing themselves from continuous pain of depression, anxiety or tendency to get engaged in self-harming behaviours like suicidal tendencies (Holmes et al., 2020) emerged due to the pandemic. The scale developed can be helpful and used by people of all genders and age groups across the nations.

5.3 Limitation and Future Research Directions

The study also has a few limitations which future researchers can overcome. First, only two health dimensions – intellectual and emotional – were considered in this study, whereas there are other health dimensions like - physical health (Hogan et al., 2002; Pavalko et al., 2003; Watson & Pennebaker, 1989) and spiritual health (Larson & Larson, 2003). Future researchers are encouraged to consider these health dimensions and develop a single scale for measuring all health types.

The second limitation could be related to items generation for measuring study constructs. Since the pandemic situation was new and limited studies were available; hence items were generated based on available studies, personal experience and expert sessions on health attended by researchers. Proper sampling of items could be done, and an advanced version of the scale could be possible in the near future.

6. Conclusion

Since COVID-19 has been declared a global pandemic by the WHO, many researchers from multiple domains like the medical fraternity started investigating the effects of the pandemic on different dimensions of human health like physical, mental and spiritual health. An intense review of available literature has indicated that only a handful of researchers considered intellectual health and emotional health as separate components of health. It was observed that emotional and intellectual health were considered the same, and the differences of these two dimensions were ignored and neglected, leaving a huge gap area. None of the studies developed a scale for measuring these health dimensions during the pandemic as the situation was unpredictable. Based on this premise, our study aimed at developing a scale for measuring the intellectual and emotional health of an individual during the pandemic.

The scale development and validation process was in line with the approach proposed by Churchill (1979), Hinkin (1998) and DeVellis (2017). Data was collected on the basis of items generated. The EFA resulted in four factors which were further confirmed by CFA. The reliability and validity of the results obtained through factor analysis was tested and resulted in obtaining a final scale. The study also aimed and succeeded in categorizing behaviour indicators of each health dimension as eustress and distress. The results of the scale development process have given us four factors, and each factor measures all the four aspects – a) emotional health with eustress, b) emotional health with distress, c) intellectual health with eustress, and d) intellectual health with distress.

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Prerna: A Multi-item Scale for Measuring Consumer Motivation Behind Online and Offline Shopping

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Abstract

The main intention of the study is to develop, refine and evaluate a multi-item scale to measure and compare consumer motivations behind online and offline shopping. The research also explores motives behind online and offline shopping with respect to hedonism and utilitarianism, along with the impact of demographic and behavioural factors. Finally, customers are identified and segmented based on their shopping motives. Researchers followed the scale development paradigms suggested by Carpenter (2018) and Churchill Jr (1979). Primary techniques used were EFA, CFA, PLS-SEM, and Cluster Analysis. A four-factor scale was developed, showing good psychometric properties that will help e-retailers understand the consumers' motivations behind online and offline shopping.

Keywords: *hedonic motivation, utilitarian motivation, scale development, customer segmentation, online shopping, offline shopping.*

1. Introduction

With increasing internet penetration, increased FDI inflow, and growth of emerging technologies, internet retail is rising at a fast pace. In the online retail segment, very low cost and effort are involved when a consumer decides to switch from one retailer to another. Hence to maintain a sustainable business, it becomes imperative to study and understand what motivates customers' shopping and buying behaviour. As both the traditional and online retailers are venturing into each other's domain (Walmart and Future Group venturing into online retail; Amazon and Flipkart foraying into offline stores), this study tries to differentiate between motivations for traditional in-store (organized and unorganized) and online consumption behaviours while exploring the reasons behind individual medium selections.

Studying motives can help marketers improve the efficiency and effectiveness of their marketing strategies. Motivation is an abstract concept (Sass, 1989); it keeps on changing, especially in the Indian scenario, where the population is very diverse (socially, economically, and culturally). So consistent research on shopping motivations is necessary. Although a substantial amount of research has been done on shopper typologies and their motives, there is certainly a dearth of studies examining shopper profiling in the non-western countries' context (El-Adly, 2007). Ladhari (2008) suggested that consumers' needs and shopping patterns are dissimilar in different countries, and also culture plays a vital role in influencing customers' service quality expectations (Donthu & Yoo, 1998).

The service environment differs significantly between physical and online storefronts (Suter & Burton, 1996). Hence existing concepts of service and retailing in physical settings might be inadequate in an online context (Wolfinbarger & Gilly, 2003). E-commerce has been established to be more complicated compared to traditional business models (Santouridis et al., 2012). The researchers found few studies from an online perspective and still lesser from the Indian perspective, simultaneously comparing online and offline buying motivations. Moreover, after reviewing past studies on the subject, it was found that segmenting customers based just on gender, age, or income alone could be wrong as the digital medium is breaking all those demographic, geographic, behavioural, and socio-cultural barriers. Overall this study will try to fulfil the four research objectives mentioned below.

1. To develop, refine and evaluate a multi-item scale to measure and compare the motivations behind shopping online and offline.
2. To explore the motives behind online and offline shopping, w.r.t hedonism and utilitarianism.
3. To access the impact of various demographic and behavioural factors on the motives behind shopping.
4. To identify and segment customers on the basis of motivations towards shopping.

2. Background Study and Review of the Literature

2.1 Shopping Motivations

Motivation describes all factors that cause individuals to act in a specific way (Solomon & Rabolt, 2006). Early studies developed taxonomies of online and traditional retail shoppers, inferring different types of motivations, such as 'recreational-shopping, window-shopping, utilitarian-shopping, and economic shopping (Kuruvilla et al., 2009); 'convenience, consistency, accessibility, and delivery' (Suki, 2001); 'social avoidance, security & privacy concerns, a motive to obtain information, control over the process motivation, social engagement motivation, and cost-effective motivation' (Korgaonkar & Wolin, 1999); 'intrinsic and extrinsic motivations' (Csikszentmihalyi & Nakamura, 1989); 'purchase needs and experiential needs' (Westbrook & Black, 1985); 'functional and non-functional (Sheth, 1983), 'cognitive or affective motives' (McGuire, 1974).

The majority of studies divided motivation into hedonic and utilitarian aspects, where concepts were adapted from the scale given by Babin et al. (1994). In an online retail setting also, these two dimensions were found significant (Kim, 2006). Both hedonic and utilitarian motives characterize shopping but with different weights, depending upon the kind of shopper, products, or shopping situation (Rajan, 2020). As also observed by To et al. (2007), both hedonic and utilitarian shopping motives coexist among consumers; while one may tend to control a few consumers over others, both do influence their actions.

2.2 Utilitarian and Hedonic Shopping Motivations: Definition

Utilitarian shopping motivations are task-focused and cognitive values (Jones et al., 2006). Consumers who are motivated by utilitarian values online often look for saving the time (Kwon & Jain, 2009) or ease through which they can access the information (To et al., 2007). The utilitarian shoppers visit the store for a specific purpose and do not wish to linger there any more than they have to (Bellenger et al., 1977). From the utilitarian perceptive, shopping motivation is just to procure the product (Batra & Ahtola, 1991).

Hedonic shopping values reflect the value received from emotional aspects of the shopping experience (Jones et al., 2006). Hedonic shopping motivations can include a wish for getting entertained and escapism (To et al., 2007) or the wish to find enjoyment in looking for good negotiation opportunities (Babin et al., 1994). Hedonic shopping motivations can also include exploration and fulfilment (Arnold & Reynolds, 2003).

Martínez-López et al. (2014) studied the utilitarian motivations behind shopping online and found 'assortment, economy, convenience, customization, control desire, payment services, and abstain from social contact,' as the categories of utilitarian motivation. Arnold & Reynolds (2003) investigated hedonic motivations of shopping and found categories of hedonic motivations, such as 'exploration, social gratification, idea, role, and value shopping,' which affect shopping behaviour. To et al. (2007) explored internet shopping motives from hedonic and utilitarian perspectives and found that factors necessary for hedonic motivations were 'adventure, authority, and status.' Whereas factors necessary for utilitarian motivations were 'cost-saving, convenience, selection, and information availability.' Babin et al. (1994) developed a scale determining hedonic and utilitarian motives. The final scale proposed that hedonic shopping values fundamentally consists of the 'expression of pure enjoyment, escapism, captive, and spontaneity'; whereas utilitarian shopping motives include 'accomplishment and task completion.' The antecedent of utilitarian motivations was found to be customization and convenience, and the antecedent of hedonic motivations were adventure, authority and status (Kumar & Sadarangani, 2021).

2.3 Utilitarian and Hedonic Shopping Motivations: Comparison

Utilitarian motives were found to have a more significant impact than hedonic motives on the factors such as consumer behaviours (Bridges & Florsheim, 2008), search and purchase intentions (Khare & Rakesh, 2011), customer buying preference (Overby & Lee, 2006), purchase behaviour (Forsythe & Bailey, 1996), repurchase intention (Chiu et al., 2014), and purchase frequency and volume (Bridges & Florsheim, 2008). However, few studies found hedonic factors to have a higher impact on consumer shopping behaviour (Arruda Filho et al., 2020; Mummalaneni, 2005; Sinha, 2003;), attracting customers to search and purchase (Dholakia & Uusitalo, 2002), product selection (Howard & Sheth, 1969) and on impulsive buying (Babin et al., 1994).

2.4 Online vs Offline Shopping Motivations

Online shopping behaviour is influenced more through utilitarian motives (Barnard & Menoe, 2020). In contrast, in-store shopping may be affected more through hedonic motives (Lee et al., 2017). Online shopping lacks tangibility and empathy factors (Jun et al., 2004), and it does not provide pleasures of shopping with the family (Dholakia, 1999). Hence physical stores provide more psychological benefits than online stores (Lee et al., 2017). Gilly and Wolfinbarger (2000) conducted an extensive study and found that the significant benefits of online shopping were 'product range, ease, comparison features, abstain from social interaction, and appropriate personalization.' Whereas, in offline shopping, experimental qualities such as 'ambience, social interactions, instant fulfilment, product guarantee' were found relevant.

The absence of any prominent scale to measure the shopping motivation in an online and offline retail setting, that too from the Indian consumer's point of view, lead to the development of the 'Prerna' scale in the present study. After the scale development, it was essential to find the influence and importance of different motives in the offline and online retail settings leading to the following hypotheses;

H1: Online Utilitarian (O.U.) and Online Hedonic (O.H.) Motivations have a significant and different effect on the overall online shopping motivation

H2: Traditional Utilitarian (T.U.) and Traditional Hedonic (T.H.) Motivations have a significant and different effect on the overall traditional shopping motivation

2.5 Impact of Various Demographic and Behavioural Factors

Prasad and Aryasri (2011) found that shopping gets influenced by demographic, geographic, and psychological factors.

Gender- Jayawardhena et al. (2007) and Grewal et al. (2003) found that there is a significant effect of gender on shopping behaviour. Whereas, Wong et al. (2018) found that both males and females enjoy shopping for the same reasons. Jayawardhena et al. (2007) found that males are more likely to shop online than females. In contrast, Ren and Kwan (2009) found that women who tend to shop online happen to be more frequent online shoppers than men. Lennon et al. (2003) found that shopping motive scores were often higher among women than among men. Sinha (2003) found that males mostly shop for functional benefits, whereas Arnold and Reynolds (2003) found that hedonic motives greatly influenced females' decisions.

Income- Sultan and Henrichs (2000) found that consumers with higher family incomes are expected to shop more online than compared consumers with lower income. However, on the contrary, the findings of Korgaonkar and Wolin (1999) suggested that heavy internet users belong to the low-income category.

Age-There are significant changes in the shopping motivations with the change in age (Sahney et al., 2013). Wong et al. (2018) and Comegys and Brennan (2003) found that younger individuals are more likely to shop online. The older population happens to be more of the traditional buyers (Keng Kau et al., 2003). On the contrary, Donthu and Garcia (1999) found that young consumers search online more but do not buy as much as older people buy.

Experience- Keng Kau et al. (2003) found that consumers with prior experience in online shopping tend to have more intentions to purchase.

Distance- Perea y Monsuwé et al. (2004) found that geographical distance from a retail outlet is an essential factor determining the consumer's shopping behaviour.

In the literature review, several pieces of research were found that studied the impact of various demographic and behavioural factors on customer shopping, but no major study was found that explained their impact specifically on their shopping motivations. Several studies segmented the customers based on demographic and behavioural factors, but not based on motivational factors, leading to the formulation of the following hypothesis and the objective of identifying and segmenting customers on the basis of motivations towards shopping as discussed towards the end of section 1 (Introduction).

H3: Various demographic and behavioural factors have a significant effect on different shopping motivations found in the study.

[Demographic and behavioural factors include age, gender, income, distance from the physical retail outlet, the experience of internet and online retail usage, surfing and purchase frequency; shopping motivations includes O.U. (Online Utilitarian), O.H. (Online Hedonic), T.U. (Traditional Utilitarian) and T.H. (Traditional Hedonic)].

3. Research Methodology

Researchers followed the scale development paradigm proposed by Carpenter (2018) and Churchill Jr (1979). In Table 1, preliminary and pilot studies are broadly covered, with a brief description of subsequent steps, which are primarily discussed in the finding and analysis section.

An inductive research approach with conclusive (descriptive) designs was used in this study. Methodologies applied in the study were Quantitative and Cross-sectional, by using Positivism/Empirical philosophy. The survey technique was used for data collection by using a structured, multi-item, five-point, self-administered questionnaire. Online surveys were conducted through e-mails and mobile messaging apps, while offline surveys were carried out in the respondent's colleges and homes. Only people who have used online retail services were selected for the survey.

Table 1. Summary of the steps followed in the scale development, refinement, and evaluation

Stage	Process	Resultant items
Initial Construct/ scale development	Literature review/inductive method (60) + Focused interview/deductive method (65)	103
Preliminary study	Review through the experts (15) for checking face and content validity	23
Pilot study	Surveyed (91) Item to total correlation (>0.50), Item to item correlation (>0.30). Principal Component Analysis using Varimax rotation (Items with a factor loading (>0.40), cross -loadings (<0.30), and communalities (>0.40), Cronbach coefficient (>0.70)	16
Final Study- E.F.A.	Survey (518) Exploratory Factor Analysis	14
Final Study- C.F.A.	Survey (518) Confirmatory Factor Analysis	12
Final Study - Evaluation	Evaluation of the psychometric properties of the scale	12

Note: Limits prescribed by Hair Jr. et al. (2014) and Nunnally and Bernstein (1994).
Source: Process used by authors.

After the preliminary and pilot study, a scale with 16 items was sent for validation to a sample of more than 900 respondents from Delhi N.C.T., out of which around 518 responses were returned; the sample size was above prescribed limits stated by Hair Jr et al. (2014); Hair et al. (2011); Worthington and Whittaker (2006); and VanVoorhis and Morgan (2007) for this kind of research. In this study, researchers used (non-probability) purposive sampling for sample selection because the exact population parameters were unknown, and the sampling frame was unavailable (Kotler & Armstrong, 2016). The final scale had a total of 12 items shortlisted after the exploratory and confirmatory factor analysis.

Major statistical tools used in the study were E.F.A. (Principal Axis Factoring), C.F.A., Cluster Analysis, and PLS-Bootstrapping for hypothesis development. As PLS-SEM has a higher level of statistical power (Hair et al., 2011), it does not have limiting assumptions regarding the model specifications or data and can also work on non-normal data (Cassel et al., 1999). It can work with a small and much wider range of sample sizes (Diamantopoulos & Siguaw, 2013.

4. Findings and Analysis

4.1 Demographic and Behavioural Profiling of Respondents

A total of 518 respondents were there in the final study (Male-292 and Female-226). The average age of the respondents was 24.5 years, and the average monthly family income was INR 62,527.

The approximate distance between the nearest physical retail store and the respondent's place was 1326 meters. On average, they have been using the internet for the last eight years and ten months and online retail sites from the past three years and seven months. While exploring the correlation between the experience of internet usage and experience of online retail usage, it shows a positive and significant correlation (r=0.427, >0.001). They visit online sites 25.36 times on average per month, whereas shop only 2.97 times.

The majority of respondents surveyed preferred purchasing online through the Mobile Website/ Application of the retailer (42.9%), followed by purchasing through a physically organized retail outlet/shopping mall (20.3%). More percentage of respondents prefer to purchase online after getting information offline (12.2%) rather than the reverse (9.1%). Respondents using mobile phones for purchase were five times the respondents using laptops/ desktops for purchase.

The most crucial motive to shop online was 'Convenience or ability to shop 24X7' ($x = 4.25$, s.d.=0.883). In traditional offline shopping, the most crucial motive was 'Considering shopping offline with friends and family as a good way of outing or get together ($x = 3.59$, s.d.=1.069).

4.2 Exploratory Factor Analysis

Before the application of E.F.A., Common Method Bias (C.M.B.) was checked using Harman's single factor score. The total variance for the single factor found was 22.28%, which was in concurrence with the study conducted by Mat Roni (2014).

Following the preliminary and pilot study, 16 items were subjected to Exploratory Factor Analysis with principal axis factoring and orthogonal rotation (Varimax), as suggested by Tabachnick and Fidell (2007). Kaiser-Guttman Criterion was used to identify the number of extracted factors (Carpenter, 2018). A four-factor model was formed- items exhibiting low factor loadings (<.40), high cross-loadings (>.40), or low communalities (<.30) were eliminated (Carpenter, 2018; Nunnally & Bernstein, 1994). This left the scale with 14 items. Two variables, i.e., OU2 'There are more options for the latest products and brands available with ease' and TH3 'I tend to forget my problems/ tension, and it also reduces stress', were deleted. The remaining 14 items were submitted for further exploratory factor analysis, which obtained satisfactory results.

The factor solution accounted for approximately 67.08% of the total variance and exhibited a K.M.O. measure of sampling adequacy of 0.783. The measures of each item ranged between 0.676 and 0.856; Bartlett's chi-square was significant. All communalities ranged from 0.555 to 0.806. All the values were under the threshold recommended range suggested by Hair Jr. et al. (2014), Netemeyer et al. (2003), and Nunnally and Bernstein (1994).

Table 2. Exploratory Factor Analysis Results

	Loadings	Percentage Variance Explained	Eigenvalues
Traditional Utilitarian Motives		18.854%	3.480
TU3	.838		
TU4	.835		
TU2	.803		
TU1	.725		
Online Hedonic Motives		17.887%	3.043
OH4	.827		
OH3	.778		
OH1	.766		
OH2	.740		
Online Utilitarian Motives		16.147%	2.278
OU1	.888		
OU3	.884		
OU4	.798		
Traditional Hedonic Motives		14.192%	1.865
TH4	.886		
TH1	.774		
TH2	.763		

Note: Extraction Method- Principal Axis Factoring. Rotation Method- Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.
Source: Authors' Analysis

Table 2 suggests that factor 1 represents consumer's Traditional Utilitarian Motives (T.U.); Factor 2 Online Hedonic Motives (O.H.); factor 3 Online Utilitarian Motives (O.U.); and factor 4 Traditional Hedonic Motives (T.H.).

4.3 Confirmatory Factor Analysis

After E.F.A., to measure the validity and reliability of the construct, C.F.A. was conducted. As suggested by Kline (2013), both E.F.A. and C.F.A. were performed on separate samples, i.e., E.F.A. was performed during pilot testing on 91 responses and later E.F.A. and C.F.A. both on 518 responses, during the final study. It was applied to the separate data to rule out the possibility that the previous findings were due to mere chance.

After an initial inspection of the modification indices (M.I.s), two items were removed (TU2) 'Delivery/ possession of goods is immediate', and (OH4) 'Surfing or buying products online makes me happy'. A final confirmatory model was then estimated on the remaining 12 items. Model fit was substantially improved CFI (0.979), TLI (0.972), SRMR (0.0404), RMSEA (0.376-0.600), Chi-square (132) were under the acceptable limits suggested by Hair Jr. et al. (2014). All modification indices were mostly low, this model was finalized, and the final 12 items are mentioned in Table 3.

Table 3. Factor Loadings through C.F.A.

Factor	Indicator	P	C.F.A. item Loading
Online Utilitarian	OU1: Online shopping allows me to shop 24x7	< .001	0.898
	OU3: Online shopping saves the effort of physically visiting different stores to complete shopping and provides one-stop shopping	< .001	0.891
	OU4: Do not have to wait in the long queues to get served	< .001	0.810
Online Hedonic	OH1: I find the process of online shopping very enjoyable	< .001	0.770
	OH2: Online shopping trip truly feels like an escape from daily routine life	< .001	0.739
	OH3: I find online shopping experience very stimulating	< .001	0.781
Traditional Utilitarian	TU1: I can physically examine the product before buying	< .001	0.662
	TU3: I know who I have to contact in case of any problem	< .001	0.877
	TU4: I trust them more than online stores in terms of quality	< .001	0.878
Traditional Hedonic	TH1: To me, sh opping offline with friends and family is a good way of an outing or get together	< .001	0.781
	TH2: I enjoy exploring a different variety of products physically	< .001	0.751
	TH4: I like to enjoy the ambience of the store	< .001	0.896

Source: Authors' Analysis

Finally, after preliminary, pilot study and the final exploratory and confirmatory analysis, a total of 103 motive items were reduced to four factors. Factor mean scores- OH(3.77), O.U. (4.20), T.H. (3.34), T.U. (3.14) containing 12 variables in total, as given in Table: 3. Item per concept was three, which were more than the prescribed minimum limits suggested by Worthington and Whittaker (2006) and Yoo and Donthu (2001). The researcher can conclude from the mean scores that, overall, consumers are more motivated to shop online these days than traditional offline shopping, and they get more utilitarian pleasure out of it rather than the hedonic pleasures. Secondly, it was evident from the research that, although consumers are less motivated to shop through offline or traditional retail stores, they obtain more hedonic pleasure from shopping offline. This means the majority of the consumers shop online for the utilitarian benefits, whereas they shop offline more for gaining hedonic pleasures.

Table 4. Reliability and validity measurement of the constructs

	C.R.	AVE	MSV	ASV	C. alpha
OU	0.901	0.752	0.071	0.028	0.899
OH	0.862	0.610	0.013	0.004	0.859
TU	0.851	0.659	0.071	0.033	0.845
TH	0.852	0.659	0.029	0.010	0.848

Source: Authors' Analysis

As illustrated in Table 4, coefficient alpha estimates range from 0.845 to 0.899, and the composite reliability estimates range from 0.851 to 0.901 (signifying internal consistency of the model) are considered acceptable (Hair Jr. et al., 2014). Standard loadings in this study were ranging between 0.662 and 0.898 (>0.5), and the minimum AVE of a factor was 0.610 and was less than Composite reliability values (> 0.50) (Hair Jr. et al., 2014); this demonstrated the convergent validity of the model (Hair Jr. et al., 2014). Construct validity (Vooris & Clavio, 2017) was also fulfilled as - Average Variance Extracted (AVE) of a factor was above 0.50 to demonstrate convergent validity, and AVE of the Factor was more than the squared correlation between one factor and any other factor (explained in Table 5) for the discriminant validity. Criterion validity in this study was curtained by a pilot study and final study using different sample sizes.

Table 5. Squared correlation matrix of constructs

	OU	OH	TU	TH
OU	**0.752**			
OH	0.000117	**0.610**		
TU	0.000745	0.000266	**0.659**	
TH	0.000462	2.88E-07	1.8E-08	**0.659**

Note: The bold values represent the square root of average variance extracted for each construct, whereas the others represent the correlation between variables."
Source: Authors' Analysis

4.4 Hypotheses Testing using PLS-Bootstrapping

Past studies suggest that customers expect a combination of utilitarian and hedonic shopping motivations from online retail stores. Table 3 contains all the 12 variables finalized in the study. In addition to that, the relevance and comparative importance of those motives were explored in this study. For the analysis, the assumptions for parametric tests such as normality of data (Kolmogorov-Smirnov test) and homogeneity of variances (Levene's test) were checked, which were not showing satisfactory results (Field, 2013; Hair Jr. et al., 2014). Even though data was in interval scale and outliers were removed through Winsorizing, and according to Norman (2010) and Hunter and Schmidt (1990), parametric tests are extremely robust concerning violations of assumptions if the sample size is huge such as in this study was 518. However, the researchers still used non-parametric PLS-SEM to analyse for better results. PLS-Bootstrapping was used to test the hypotheses.

As the PLS-SEM algorithm converged data in four iterations (<300), it means that the data was normal and suitable for further investigation (Wong, 2013). There are two sub-models/components in a PLS-SEM Model.

4.5 Measurement Models

All the models formed in this study reflected validity, reliability, and predictability. Therefore, it will not be explained again in the structural modelling section. Models followed the internal consistency as the composite reliabilities (C.R.) ranged between 0.887 and 0.937, and Cronbach's alpha values were between 0.808 and 0.899. Both were above the minimum accepted values of 0.6 and 0.7, respectively (Nunnally & Bernstein, 1994). Models

showed the indicator reliability as indicator loadings ranged between 0.813 and 0.924, which were much above 0.7, as suggested by Hair et al. (2011). Construct validity was also satisfied as for convergent validity; the value of AVE ranged between 0.723 and 0.833 (>0.50) (Hair et al., 2011). For the discriminant validity, minimum AVE (0.723) was more than the construct's highest squared correlations with any other latent construct (0.0225) (Fornell-Larcker Criterion) (Fornell & Larcker, 1981).

Stone-Geisser's Q2 (Stone, 1974) values of the models in this study obtained through Blindfolding (omission distance six by using a Path weighting scheme and maximum iterations 300) were more than zero showing the predictive relevance of the models (Hair et al., 2011).

The goodness of fit (GoF) proposed by Tenenhaus et al. (2005) was used to assess the structural model. The values of GoF for the Models ranged between 0.156 and 0.572, which were above the cut-off values proposed by Wetzels et al. (2009) {GoF=0.10 (small); GoF=0.25 (medium); and GoF=0.36 (large)}.

4.5.1 Structural Models - Objective 2

A non-parametric bootstrapping procedure with 5,000 resamples of the dataset (N=518) was applied before running the P.L.S. algorithm (For which Path Weighing Scheme was used) to find the statistical significance of factor loadings and path coefficients (Hair et al., 2011).

According to Table 6, it was found that both O.U. and O.H. had a significant positive influence on Overall Online Motivation, although the effect of O.U. (0.845) was more than the effect of OH (0.444). It was also found that both T.U. and T.H. had a significant positive influence on Total Traditional Motivation, although the effect of T.H. (0.666) was more than the effect of T.U. (0.653). These same results were also evident from descriptive analysis done after the Confirmatory Factor Analysis.

4.5.2 Structural Models- Objective 3

Out of all the findings explained in Table 7, researchers have mentioned only the significant relationships in the discussions. According to Model 3: experience of internet usage, the experience of online retail usage, the average number of times surfing the online retail sites/APPs, distance from a physical retail store – had a significant positive effect on the consumer's Online Utilitarian Motivations, i.e., with their increase, the consumer's Online Utilitarian Motivation also increases. Out of these, the maximum effect was of consumer's experience of internet usage, followed by the distance from a physical retail store. According to Model 4: experience of internet usage, the average number of purchases through online retailers, the average number of times surfing online retail sites/apps, and distance from the physical retail store– had a significant positive effect on the consumer's Online Hedonic Motivations, i.e., with their increase, the consumer's Online Hedonic Motivation also increases. Out of these, the maximum effect was of consumer distance from the physical retailer, followed by the experience of internet usage. Whereas age had a significant negative effect on the consumer's Online Hedonic Motivations, i.e., with the increase in consumer's age, their Online Hedonic Motivation decreases.

According to Model 5: experience of online retail usage– it had a significant negative effect on the consumer's Traditional Utilitarian Motivation, i.e., with the increase in the consumer's Experience of Online Retail Usage,

Table 6. Coefficient and t-values in Model 1 and Model 2

Path	Coefficient	t-Value	Result
	Model 1		
OH TO	0.444	4.205*	Accepted
OU TO	0.845	12.916*	Accepted
	Model 2		
TH TT	0.666	12.606*	Accepted
TU TT	0.653	12.749*	Accepted

*Note: *Significant at the 0.01 level. (TO= Overall of Online Motivation, TT=Overall of Traditional Motivation)*
Source: Authors' Analysis

Table 7. Impact of various demographic and behavioural factors on the motives behind shopping

Path**(Model 3)**	Coef.	t-Value	Result	Path **(Model 4)**	Coef.	t-Value	Result
Age OU	-0.046	1.072^{ns}	Rejected	Age OH	-0.063	1.718**	Accepted
Gender OU	-0.045	1.119^{ns}	Rejected	Gender OH	-0.034	0.995^{ns}	Rejected
Income OU	-0.020	0.615^{ns}	Rejected	Income OH	-0.045	1.248^{ns}	Rejected
Ex_IN OU	0.297	5.776*	Accepted	Ex_IN OH	0.270	5.329*	Accepted
Ex_On OU	0.133	2.908*	Accepted	Ex_On OH	0.046	1.142^{ns}	Rejected
Pur OU	-0.010	0.203^{ns}	Rejected	Pur OH	0.217	4.437*	Accepted
Surf OU	0.104	2.894*	Accepted	Surf OH	0.114	2.987*	Accepted
Dist OU	0.212	3.949*	Accepted	Dist OH	0.277	5.584*	Accepted
Path **(Model 5)**	Coef.	t-Value	Result	Path **(Model 6)**	Coef.	t-Value	Result
Age TU	0.012	0.257	Rejected	Age TH	-0.028	0.494	Rejected
Gender TU	-0.050	1.127	Rejected	Gender TH	0.161	3.558*	Accepted
Income TU	0.034	0.677	Rejected	Income TH	0.035	0.737	Rejected
Ex_IN TU	-0.051	0.807	Rejected	Ex_IN TH	0.062	0.957	Rejected
Ex_On TU	-0.165	3.141*	Accepted	Ex_On TH	-0.059	1.148	Rejected
Pur TU	0.068	1.145	Rejected	Pur TH	-0.035	0.624	Rejected
Surf TU	-0.034	0.713	Rejected	Surf TH	-0.017	0.363	Rejected
Dist TU	0.036	0.552	Rejected	Dist TH	0.039	0.629	Rejected

*Note: *Significant at the 0.01 level, **Significant at the 0.1 level, ns = Non-significant*
Source: Authors' Analysis

consumer's Traditional Utilitarian Motivation decreases. According to Model 6: Consumer's Gender had a significant effect on the consumer's Traditional Hedonic Motivation, Female's T.H. (mean=3.53 sd=1.06) was higher than Male's T.H. (mean=3.19, sd=0.90).

This explored the impact of various demographic and behavioural factors on the motives behind shopping (which was Objective 3 of the study) and acceptance of H3: Various demographic and behavioural factors have a significant effect on different shopping motivations. The results show that demographic and behavioural factors have more impact on online shopping motivations rather than traditional shopping motivation.

4.6 Cluster Analysis for Customer Segmentation

Cluster analysis was used to identify segments of respondents who shared similar profiles across the shopping motivations. Assumptions of Cluster Analysis, i.e., sample representativeness and multicollinearity, were checked, and outliers were removed before the application of cluster analysis (Hair Jr. et al., 2014). To segment the customers

based on their motivations for online and traditional retail buying, the researchers first examined the dendrogram method of Hierarchical Clustering followed by the non-hierarchical K-Mean Clustering method. Segmentations drawn were psychographic segments as they were made based on various motivations (Strauss & Frost, 2012). Segments that represented at least 10% (51) of the total sample size were kept as shown in Table 8; the rest were deleted (Hair Jr. et al., 2014).

According to the ANOVA results, all the clusters were found to be significantly (<0.001) different from each other. For two and three clusters, they were not found significantly different. Hence the researchers came up with four clusters in total, whose details are given in Table 9 and Table 10.

Table 8. Final Cluster Centers

	Cluster			
	1	2	3	4
Average of Online Utilitarian Motivation	2.94	4.50	4.46	4.08
Average of Online Hedonic Motivation	3.46	3.86	4.40	2.98
Average of Traditional Utilitarian Motivation	4.24	2.52	3.93	2.67
A verage of Traditional Hedonic Motivation	2.74	2.59	4.08	4.34

Source: Authors' Analysis

Table 9. Cluster-wise description of respondents

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Age of the respondent	22.20	25.24	26.07	22.36
Monthly Family Income (In INR)	51913	62065	69462	61558
For how many years you have been using the internet? (Approx.)	6.41	9.46	10.56	6.88
For how many years you have been using online shopping? (Approx.)	2.75	3.91	3.92	3.03
For how many times do you visit an online retail website/Application per week? (Approx.)	4.58	6.89	7.45	4.95
For how many times have you shopped online in a month? (Approx.)	2.04	3.24	3.84	1.91
The approximate distance between the nearest physical retail store and your place (in Meter)	821.01	1448.83	1799.33	787.25
Valid N (listwise)	69	213	134	102

Source: Authors' Analysis

Table 10. Cluster-wise description of respondents

		Cluster 1		Cluster 2		Cluster 3		Cluster 4	
		F	%	F	%	F	%	F	%
Gender	Male	39	56.52	134	62.91	79	58.96	40	39.22
	Female	30	43.48	79	37.09	55	41.04	62	60.78
Preferred mode of shopping	Through physical organized retail outlet/shopping mall	26	37.68	23	10.80	19	14.18	37	36.27
	Through physical unorganized retail outlet/Kiryana stores	4	5.80	11	5.16	6	4.48	16	15.69
	Online through Mobile Website/Application of the retailer	29	42.03	106	49.77	59	44.03	28	27.45
	Online through Laptop/desktop website of the e-retailer	3	4.35	18	8.45	17	12.69	6	5.88
	Use online medium for getting information, and later prefer to purchase offline	2	2.90	22	10.33	13	9.70	10	9.80
	Use the physical retail medium for getting information, and later prefer to purchase online	5	7.25	33	15.49	20	14.93	5	4.90
	Total	69	100.00	213	100.0	134	100.0	102	100.0

Source: Authors' Analysis

The total sample was divided into four clusters:

Cluster 1 was the smallest cluster, where respondents had a maximum of Traditional Utilitarian Motivation (4.24). The average income (INR 51,913) of this cluster was minimum among all the clusters. Years of experience for internet usage, the experience of online retail usage, number of times surfing online retail site was 6.41 years, 2.75 years, and 4.58 respectively, and all these three were minimum among all the four clusters. The average number of purchases and distance from the physical retail stores was 2.04 times and 0.821 km, respectively. Distance is almost the same as the average distance of cluster four members, which were the minimum of them all. Due to this, they might be obtaining maximum Traditional Utilitarian Motivation.

Cluster 1, the percentage of males was higher than the percentage of females, but this was very similar to the ratio in the overall sample used in this study. This group mainly prefers to purchase online through the Mobile Website/Application of the retailer, although it is followed by choice through a physical organized retail outlet/shopping mall.

Cluster 2 was the biggest cluster, where respondents had a maximum of Online Utilitarian Motivation (4.5). The income of the family, number of years' experience in internet usage, experience in online retail usage, number of times surfing and purchasing through online retail site/app, distance from the physical retail store were INR 62,065, 6.89 years, 3.91 years, 6.89 times, 3.24 times, and 1.5 km respectively.

In Cluster 2, the percentage of males was much higher than that of females. Moreover, here, the male percentage was higher than the sample's overall ratio, leading to the conclusion that Cluster 2 was male-dominated. This group mainly prefers to purchase Online through the Mobile Website/Application of the retailer.

Cluster 3, where respondents had a high average for all the Motivations (Overall Motivated) (OU=4.46, OH=4.40, TU=3.93, TH=4.08); members of this group remained motivated for all the factors. The reason for this could be the highest average age of this group in all the clusters (26.07 years), which could have led to the highest monthly family income (INR 69,462). Moreover, there was no group where the highest motivation was Online Hedonic Motivation, which leads to the interpretation that this motivation is least important among the consumers. Years of experience for internet usage, the experience of online retail usage, number of times surfing and purchasing through online retail site/app, distance from the physical retail store was 10.56 years, 3.92 years, 7.45 times, 3.84 times, and 1.8 km, respectively; interestingly all of them were highest among all the four clusters.

Cluster 3, the percentage of males was higher than the percentage of females, but this was very similar to the ratio in the overall sample. This group mainly prefers to purchase Online through the Mobile Website/Application of the retailer.

Cluster 4, where respondents had a maximum of Traditional Hedonic Motivation (4.34). Family income, number of years' experience in internet usage, the experience of online retail usage, and the number of times surfing online retail site/app were INR 61,558, 6.88 years, 3.03 years, and 4.95 times respectively. The average number of purchases and distance from the physical retail stores was 1.91 times and 0.78 km, respectively, which were minimum in all the clusters. The lowest distance from the physical retail store could also be the reason for enjoying the traditional shopping experience maximum among all the clusters.

Cluster 4, the gender ratio of cluster 4 was most extreme; here, the percentage of females was much higher than that of males, contrary to the overall sample ratio. This leads to the conclusion that Cluster 4 had more females than males. This group mainly prefers to purchase through a physical organized retail outlet/shopping mall.

5. Discussion and Conclusion

After the analysis, overall, four motives were found (O.U., OH, T.U., T.H.), leading to a multi-item scale. The scale developed will help retailers measure and better understand consumers' motives behind shopping, which will help the firms plan their marketing more suitably. The most crucial motive to shop online was found to be convenience or the ability to shop 24X7; hence if offline retailers want to compete with online retailers, they should consider opening showrooms 24x7 or at least till midnight. This finding substantiates the findings of past researchers such as Maan et al. (2017) and Sahney et al. (2013).

It was evident from the research that although consumers are less motivated to shop through offline or traditional retail stores, they obtain more hedonic pleasure from offline shopping. As also suggested by Lee et al. (2017), who compared the motivations towards online shopping and offline shopping, online shopping behaviour is influenced more through utilitarian motives. In contrast, in-store shopping may be affected more through hedonic motives. Results of this study were similar to the ones found by Lee et al. (2017), Khare and Rakesh (2011) and Bridges and Florsheim (2008).

With the increased internet usage experience and distance from the physical retail outlet, customers' O.U. and O.H. increase, but O.H. decreases with the increase in age. With increased distance from the physical retail outlet, consumers' motivation to buy online increases, so a primary focus of online retailers should be on the regions with fewer physical retail outlets, especially smaller cities, where they generally do not cater.

As the experience of online shopping increases among consumers, their T.U. decreases. More females than males preferred traditional shopping for hedonic/pleasure purposes. Hence advertisers and retailers should reap this knowledge, especially while designing a promotional mix. The results here have significant findings that demographic and behavioural factors have more impact on online shopping motivations rather than the traditional shopping motivation.

Cluster Analysis resulted in four clusters, where four types of shoppers were identified, divided based on motivations behind the shopping. Segments drawn in this study will have important implications for both online and offline retailers in better Segmentation, Targeting, and Positioning.

Similar segmenting was done by researchers in the past who found the segments such as 'store-oriented online customizers, fashion-conscious changers, choice support seekers and independent apathetic' (Sebald & Jacob, 2020); 'quality at any price, value singularity, and

reputation/recreation' (Gehrt et al., 2012); whereas, Rohm and Swaminathan (2004) found that online shoppers had four segments- 'Convenience searchers, variety hunters, balanced buyers, and store oriented shoppers' and offline shoppers had three segments- 'Conscience shoppers, functional shoppers, recreational shoppers.

In future, researchers suggest conducting cross-cultural, longitudinal or qualitative studies with a more diverse multicity sample in Tier 2 and Tier 3 cities of India. Studies exploring products and services independently and in other e-commerce avenues such as social networking are recommended to increase its replicability and external validity.

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Estimating Determinants of Liquidity Risk: Empirical Evidence from Indian Scheduled Commercial Banks

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Abstract

Liquidity crises have gained much attention as a specialized field of research since the financial turmoil. Many researchers have conducted various studies for identifying the factors influencing liquidity risk. A modest attempt is made in the present research study to examine the influence of bank-specific factors on the liquidity risk in the Indian banking industry. The study is based on the secondary data obtained from the annual accounts of different banks for 17 years from 2000-to 2016 using the PROWESS database.

The pooled regression model using fixed effects model and random effect models are applied on factors such as capitalization, funding cost, operating efficiency, asset quality, bank size, deposits, net interest margin, return on capital employed, return on net worth, and liquidity to asset ratio. The data was applied using different proxy measurements for the dependent variable, liquidity risk. Based on the analysis, it was concluded that bank-specific factors, specifically profitability net interest margin (NIM), loan-deposit ratio, funding cost, capital adequacy ratio, asset quality, and deposits, affect the bank liquidity as the probability value is less than 0.05. Further profitability (return on net worth, return on capital employed), operating efficiency, and bank size (Ahmad, 2021) have an insignificant influence on bank liquidity. The policymakers and regulators should consider the above determinants while formulating policies.

Keywords: *bank liquidity, Indian banking sector, liquidity risk, profitability.*

1. Introduction

Banking is considered a vital segment for the smooth functioning of the economy. It is considered a source of collecting surplus from the public and further providing loans to those in actual need of it. This function of collecting and lending exposes the banks to varied risks. One of which is liquidity risk which arises due to poor liquidity management. Financial crises led to an adverse impact on the liquidity of the banks. (Umar & Sun, 2016) Despite unprecedented support by central banks for ensuring financial stability (Vodava, 2011), many banks were liquidated. Hence, managing liquidity is one of the most critical issues in the banking industry and has gained much attention. Proper management of liquidity in banks involves maintaining adequate liquidity at all times and regular assessment of liquidity. As per BCBS, a minimum liquidity coverage ratio that the banks need to comply with was 80% in 2017, 90% in 2018, 100% in 2019 (BIS, 2013). Besides, this paper recommended that the banks re-allocate funds to upgrade their assets (Amara & Najar, 2021).

The present study is an attempt to bring new insights on liquidity risk management based on empirical studies done in the past. The study is divided into the following sections. Section 2 deals with past research and framing a theory. Section 3 defines the objectives of the research. Section 4 describes the research methodology adopted. Section 5 relates to the data analysis and interpretation. Finally, Sections 6 and 7 contain the research study findings and bibliography.

2. Review of Literature

Past literature is the main foundation for future research studies. The liquidity crisis was identified as the leading cause of the financial turmoil of 2008. Most of the studies are conducted in the past wherein factors influence liquidity risk. Empirical literature depicts that the degree of influence of bank-specific factors in the Indian banking industry has increased manifold. Yahana et al. (2022) applied an econometric model to study the effect of liquidity risk on the performance of banks. Ahmad (2021) studied 23 banks from 2005-to 2018 to examine factors affecting bank liquidity and concluded that Return on Equity and Capital Adequacy Ratio (CAR) insignificantly affect bank liquidity. Amara and Najar (2021) employed a generalized method of moments on the data collected for 2006-2018 and concluded that CAR does not impact the liquidity risk.

Aldeen (2020) applied paired sampled t-test and OLS regression model to study the liquidity risk for private banks of Syria for a duration from 2011-17. The findings depict that CAR and non-performing loans positively impact bank liquidity. Mennawi Ahmed (2020) employed a panel data regression model on the dataset of 11 banks for a duration of 7 years from 2012-to 2018. The study is based on bank-specific factors wherein it is revealed that the degree of financing the assets from customer deposits and credit risk significantly influences liquidity risk. Mohammad et al. (2020) studied the liquidity risk management practices followed in Jordia and concluded that profitability i.e return on assets and return on equity and CAR significantly impact the liquidity risk. Arfiyanti and Pertiwi (2020) employed a panel data regression model and concluded that bank size negatively influences bank liquidity, and ROA and CAR do not influence liquidity risk. Harbi (2020) investigated the factors impacting liquidity in Islamic Banks (IB). The study discovered that, on the one hand, credit risk, inflation rate, monetary policy, profitability negatively affect liquidity. On the other hand, capitalization and GDP growth rate positively influence liquidity in IB. Massah (2019) studied the impact of micro and macro-economic variables influencing liquidity risk in MENA regions. The result revealed a significantly positive impact of bank size and capitalization on liquidity risk and a negative impact of credit risk on liquidity. Riahi (2019) found a significant positive relationship between credit risk and liquidity, further recommending that banking policymakers improvise loan management provisions. Tuga (2019) conducted a study considering commercial banks of Ethiopia wherein it was revealed that loan growth, leverage, return on assets and operational efficiency are significant indicators influencing liquidity risks in banks. Inshira (2019) examined the commercial banks of Sri Lanka and revealed that capital adequacy ratio, loan to deposit ratio, and return on assets positively impact liquidity risk while the total asset has a negative impact on liquidity risk and return on equity and liquidity has no significant association. Abbas et al. (2019) made a comparison between commercial banks operating in the USA with Asian economies. The study found profitability and bank capital has a positive impact on liquidity.

Mazreku et al. (2019) conducted a study in Balkan states for sixteen years and found that bank-related factors such as capital adequacy ratio, deposit growth, and non-performing loans significantly impact liquidity. Xia (2019) conducted a study on the position of small and medium-sized commercial banks in China and suggested that liquidity risk could be minimized by improvising asset quality and restructuring asset liabilities of the banks. Inshira and Jahfer

(2019) examined bank-specific determinants influencing liquidity crises in the banks of Sri Lanka and found that bank size insignificantly affects bank liquidity while capitalization, return on assets, and loans to deposit ratio shows a significant impact on the bank liquidity. Besides this, the study depicts no effect of return on equity on liquidity. Faizah and Hartiyah (2018) studied the determinants of bank liquidity in Indonesia at Sharia Commercial banks for a duration of 5 years from 2013-to 2017. It was found that return on assets, bank size, net working capital, and capitalization significantly affect bank liquidity. Capitalization and bank size have a negative effect on liquidity risk, while return on assets and net working capital has a positive effect on liquidity. Tan and Kong (2018) collected data for 18 commercial banks of Malaysia for 11 years (2006 to 2016). Liquidity was taken as a stochastic variable, and bank size, capital adequacy, leverage, inflation rate, foreign exchange rate and deficit financing were taken as deterministic variables. The research concluded that bank size is a favourable factor, whereas CAR and leverage are unfavourable factors influencing bank liquidity. Shamas et al. (2018) performed a study in Bahrain for a period of five years (2007-2011). Using panel data regression model, the econometric model showed ROAA to be positively linked to NPLs, and CAR negatively related to bank liquidity. Ganiyya (2017) conducted a similar study on Islamic banks in Sudan and Malaysia and concluded management efficiency denoted by deployment ratio is an important factor influencing the liquidity of the banks Further, Rashid et al. (2017) employed fixed effects models on 39 Islamic banks for a time duration of six years (2009-2014). The variable considered in the study includes GDP growth rate, bank size, return on assets, loan loss provision, and inflation rate. The research revealed that bank size and loan loss provision are important factors affecting the liquidity position. Harbi (2017), in a study, attempted to identify key determinants influencing bank liquidity and concluded that capital ratio and credit risk have a negative impact on banks, whereas bank size and efficiency have a positive influence on bank liquidity. The result of Khoury (2015) showed a positive relationship between bank liquidity and bank size and lower loan growth and a negative relation between bank liquidity and loan growth rate. Roman and Sargu (2015) found total capital ratio and return on average equity have a positive impact, and the ratio of impaired loans to total loans have a negative impact on liquidity. Ferrouhi (2014) revealed bank performance is directly affected by the size of banks and is indirectly related to the bank's Total Assets. In a study, Lee et al. (2013) revealed a negative relationship between bank liquidity and bank capital, bank size, and profitability (ROE). However, bank liquidity has a positive relationship with non-performing loans. Laurine (2013) studied the liquidity risk factors in Zimbabwean commercial banks for three years and found that capital adequacy and size negatively influence bank liquidity; on the other hand, non-performing assets have a positive influence on bank liquidity. Arif and Anees (2012) concluded that the bank's profitability, liquidity gap and non-performing loans are the most crucial factors that impact the Liquidity Risk.

3. Research Gap

The empirical literature relating to these crises have been undertaken only in developed economies, and the bank-specific determinants were not considered. Besides this, it has been identified that there is a scarcity of studies in the Indian context. Therefore, a need was felt to focus on the bank-specific factors which can be controlled by the regulators and policy makers and are essential for ensuring continuity in banking operations (Nijskens & Wagner, 2011).

4. Objective of the Study

The major challenge faced by banks in order to ensure sustainable financial stability is the liquidity risk. A strong liquidity position in banks helps in ensuring seamless development of the economy as banks act as the main source of finance. The major purpose of the present paper is to study the factors influencing liquidity risks in Indian banks.

5. Data and Methodology

5.1 Data Sources and Sample Size

The study relates to secondary data gathered from the PROWESS database for 17 years, from 2000 to 2016. The final sample consists of 56 scheduled commercial banks comprising of 6 State Bank of India and its associates, 20 public sector banks, 16 private sector banks, and 14 foreign banks.

5.2 Variable Description

Table 1. Description of variables under study

Variable	Symbol	Measuring unit	Expected Relationship
Liquidity Risk	LIQ	$\frac{\text{Liquid assets}}{\text{Total assets}}$ $\frac{\text{Cash}}{\text{Deposits}}$ $\frac{\text{Quick assets}}{\text{Deposits}}$ $\frac{\text{Quick assets}}{\text{Current liabilities}}$	NA
Capitalization	CAP	$\frac{\text{Bank capital + Reserves}}{\text{Total assets}}$	Negative
Funding Cost	FC	$\frac{\text{Total interest Expense}}{\text{Total Liability}}$	Positive
Operating efficiency	OE	$\frac{\text{Operating Expenses}}{\text{Total assets}}$	Positive
Asset quality	AQ	$\frac{\text{Loan}}{\text{Total deposits}}$	Positive
Bank Size	SZ	Total assets	Positive
Deposits	DTA	$\frac{\text{Deposits}}{\text{Total assets}}$	Negative / Positive
Net interest margin	NIM	Interest Income- Interest Expense	Positive
Return on Capital Employed	ROCE	$\frac{\text{Profit after interest,tax divident}}{\text{Capital Employed}}$	Negative
Return on net worth	RONW	$\frac{\text{Profit after interest , tax \&}}{\text{Equity share capital}}$	Positive
Loan to asset ratio	LAR	$\frac{\text{Loan}}{\text{Total Asset}}$	Positive

Source: Author's Compilation.

5.3 Empirical Model

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \beta_8 X_{8it} + \beta_9 X_{9it} + \beta_{10} X_{10it} + \varepsilon_{it}$$

Where,

Y_{it} – Liquidity for bank (i) at time/year (t)

it – depicts bank and year.

X_1 – Capitalization for bank (i) at time (t)

X_2 – Funding Cost for bank (i) at time (t)

X_3 – Operating Efficiency for bank (i) at time (t)

X_4 – Asset Quality for bank (i) at time (t)

X_5 – Bank Size for for bank (i) at time (t)

X_6 – Deposits for bank (i) at time (t)

X_7 – Net interest margin for bank (i) at time (t)

X_8 – Return on capital employed for bank (i) at time (t)

X_9 – Return on net worth for bank (i) at time (t)

X_{10} – Loan to assets ratio for bank (i) at time (t)

ε_{it} – Random Error term for bank (i) at time (t)

6. Data analysis and findings of the study

6.1 Descriptive Statistics

As per Table 2, the probability value is less than the significance level of 5%; hence, the error term is not normally distributed at 0.05. It is due to the application of the fixed effects model, and even in a longitudinal study with a large sample, it is assumed that the error term is normally distributed (Gujarati & Porter, 2009).

6.2 Correlation Matrix

Table 3 shows that the coefficient of correlation for all variables is less than 0.80, hence the absence of multicollinearity.

Inferential Analyses: Under this, the pooled regression model, fixed effect estimates, and the random-effects model is used. Further, the Hausman test is applied to make the selection among the random effect estimates and fixed effect estimates.

Table 2. Descriptive Statistics of Liquidity Risk and its Determinants

	CTD	QAD	LATA	QR	CAP	FC	OE	AQ	SZ	DTA	NIM	ROCE	RONW	LAR
Mean	11.0	21.2	13.6	3.6	9.5	5.0	12.9	72.8	936627.1	109.2	2.3	6.7	12.7	51.6
Standard Error	0.6	0.9	0.3	0.1	0.3	0.1	0.8	1.2	60528.2	6.8	0.0	0.2	0.4	0.4
Median	6.6	14.4	11.5	3.0	6.2	5.1	7.2	70.4	320622.8	83.5	2.5	6.5	13.6	55.1
Standard Deviation	19.3	26.5	9.0	3.5	9.7	1.7	24.8	35.6	1867566.3	210.1	1.5	7.2	13.3	13.4
Kurtosis	106.8	47.9	7.8	54.0	17.3	8.9	42.1	64.3	50.8	42.3	7.6	7.0	12.8	1.7
Skewness	8.8	5.7	2.3	5.7	3.8	0.8	5.4	5.7	5.9	6.1	-1.9	-0.9	-2.0	-1.2
Maximum	297.5	354.7	68.1	51.6	79.4	20.9	343.1	574.3	23615268.9	2321.3	6.9	40.2	64.2	76.1
Count	952	952	952	952	952	952	952	952	952	952	952	952	952	952

Source: Author's Calculation.

Table 3. Correlation Matrix of Liquidity Risk and its Determinants

	CTD	QAD	LATA	QR	CAP	FC	OE	AQ	SZ	DTA	NIM	ROCE	RONW	LAR
CTD	1													
QAD	0.58	1												
LATA	0.39	0.78	1											
QR	0.38	0.46	0.55	1										
CAP	0.62	0.67	0.42	0.34	1									
FC	-0.26	-0.37	-0.22	0.03	-0.44	1								
OE	0.07	0.02	-0.01	-0.01	0.00	-0.05	1							
AQ	-0.11	0.04	-0.15	-0.19	0.25	-0.23	0.03	1						
SZ	-0.11	-0.10	-0.10	-0.06	-0.14	0.01	-0.06	0.06	1					
DTA	0.23	0.31	0.45	0.26	0.36	-0.15	-0.02	-0.01	-0.08	1				
NIM	-0.07	0.05	0.03	-0.15	0.18	-0.37	0.03	0.28	0.05	0.18	1			
ROCE	-0.06	-0.02	0.06	-0.02	-0.12	-0.02	-0.04	-0.15	-0.08	0.01	0.10	1		
RONW	-0.10	-0.07	-0.03	-0.10	-0.17	-0.06	-0.08	-0.07	-0.02	-0.06	0.10	0.89	1	
LDR	-0.51	-0.44	-0.41	-0.24	-0.33	0.19	0.01	0.34	0.29	-0.11	0.30	0.03	0.08	1

Source: Author's Calculation.

Model 1

The model has considered a liquid asset to total assets as the proxy for liquidity risk. In the model (Table 4), liquid asset to total assets is taken as liquidity risk. Hausman test results depict the acceptance of fixed effects results in comparison to the random-effects model. R- square value is 0.5611, which is an indicator that only 56.11% of the variation of liquidity in banks is demonstrated through variation of capitalization, funding cost, operating efficiency, asset quality, bank size, deposits, net interest margin, return on capital employed, return on net worth, and liquidity to asset ratio.

Model 2

The model (Table 5) measures liquidity as the ratio of cash to deposits. The fixed effects estimates are computed, which depicts loan-deposit ratio, operating efficiency, capital adequacy ratio, profitability (RONW, ROCE, NIM), and asset quality have a notable impact on bank liquidity as P-value is lower to 0.05 significance level. Further funding cost, deposits, bank size depicts no effect on liquidity. The result of Model Two concludes that 61.11% variation of liquidity in banks can be elucidated through differences in loan-deposit ratio, capital adequacy ratio, profitability (RONW, ROCE, and NIM), and funding cost, deposits, operating efficiency, bank size, and asset quality. The remaining 38.89% could not be explained through this model.

Model 3 QAD

In the model (Table 6), the proxy for liquidity is taken as quick assets to deposits. Thus the result of Model 3 concludes that 61.67% variation of liquidity in banks can be demonstrated by the variation of loan-deposit ratio, profitability (NIM, RONW, ROCE), funding cost, deposits, CAR, operating efficiency, size of bank, and asset quality. The remaining 38.33% could not be explained through this model.

Model 4 QR

As per Table 7, quick assets to current liabilities are taken as a proxy measurement for liquidity risk. Thus, the result of Model 4 concludes that 46.39 % variation of liquidity in banks can be described through the difference of loan-deposit ratio, CAR, profitability (ROCE, RONW, NIM), funding cost, deposits, operating efficiency, and bank size. The remaining 53.61% could not be explained through this model.

Summarization of above models

Table 8 depicts the different models analyzed by the researchers for examining the influence of bank-specific factors on bank liquidity. In all the above models, liquidity was taken as a dependent variable and capitalization, funding cost, operating efficiency, asset quality, bank size, deposits, net interest margin, return on capital employed, return on net worth, and liquidity to asset ratio were taken as independent variables.

Out of the four models used by the researcher, Model 3 is considered to be the best fit model as the R-square value is the highest, which is 61.67%. This depicts that 61.67% variation of liquidity in banks is enumerated through the variation of CAR, profitability (RONW, ROCE, NIM), funding cost, deposits, loan-deposit ratio, bank size, asset quality, and operating efficiency. The fixed effects estimates are computed, which depicts loan-deposit ratio, capital adequacy ratio, profitability (NIM), funding cost, deposits, and asset quality have a significant impact on the liquidity risk of the scheduled commercial banks as its P-value is less than 5 %. Further profitability (return on capital employed, return on net worth), operating efficiency, and bank size have an insignificant influence on the liquidity of commercial banks. Thus, banks should make efforts to manage these variables to minimize the liquidity risks of the bank.

Table 4. Regression analysis (Model 1)

Model 1	Variables	Co-efficient	t-statistics	Probability	R^2	F-statistics	Durbin Watson
Pooled Effects	C	23.68477	16.03764	0.0000			
	CAR1	0.184225	5.680343	0.0000			
	FCOST2	-0.308878	-1.854483	0.0640			
	OPEFF2	-0.004541	-0.487834	0.6258			
	AQ	-0.205853	-8.899544	0.0000			
	SIZE	3.12E-07	2.405340	0.0163	**0.398901**	**62.31393**	**0.916816**
	DACBTA	0.014141	11.91805	0.0000			
	NIM	-0.064515	-0.340713	0.7334			
	ROCE	0.319663	4.418377	0.0000			
	RONW	-0.129409	-3.280174	0.0011			
	LAR	-0.043008	-2.727039	0.0065			
Fixed Effects	C	28.99572	17.65989	0.0000			
	CAR1	0.090027	2.150564	0.0318			
	FCOST2	-0.637017	-3.898394	0.0001			
	OPEFF2	-0.006753	-0.813920	0.4159			
	AQ	-0.267076	-10.32979	0.0000			
	SIZE	2.00E-07	1.078135	0.2813	**0.561170**	**17.39148**	**1.249646**
	DACBTA	0.001883	0.782329	0.4342			
	NIM	0.009392	0.050214	0.9600			
	ROCE	0.304946	3.614403	0.0003			
	RONW	-0.145808	-3.425662	0.0006			
	LAR	0.004815	0.309814	0.7568			
Random Effects	C	26.85471	17.35009	0.0000			
	CAR1	0.122508	3.430136	0.0006			
	FCOST2	-0.519464	-3.299551	0.0010			
	OPEFF2	-0.006173	-0.747187	0.4551			
	AQ	-0.247347	-10.53449	0.0000			
	SIZE	2.25E-07	1.430140	0.1530	**0.256713**	**32.43081**	**1.123073**
	DACBTA	0.009985	5.962211	0.0000			
	NIM	-0.045456	-0.251916	0.8012			
	ROCE	0.318684	4.169267	0.0000			
	RONW	-0.147672	-3.711285	0.0002			
	LDR	-0.010424	-0.692664	0.4887			
Hausman Test	**Chi-Square d.f**		**Chi- Square statistics**			**Probability**	
	10		**49.522373**			**0.0000**	

Note: Sample: 17 years
Cross sections: 56
Total panel observations: 952
Source: Author's Computations

Table 5. Regression Analysis (Model 2)

Model 2	Variables	Co-efficient	t-statistics	Probability	R^2	F-statistics	Durbin Watson
Pooled Effects	C	28.33456	10.12733	0.0000			
	CAR1	1.180181	19.20798	0.0000			
	FCOST2	0.048193	0.152730	0.8786			
	OPEFF2	0.063518	3.601632	0.0003			
	AQ	-0.395870	-9.033784	0.0000			
	SIZE	6.65E-07	2.707570	0.0069	**0.528474**	**105.2408**	**1.260663**
	DACBTA	0.001312	0.583444	0.5597			
	NIM	-1.292310	-3.602464	0.0003			
	ROCE	-0.106719	-0.778609	0.4364			
	RONW	0.094052	1.258368	0.2086			
	LDR	-0.174938	-5.855065	0.0000			
Fixed Effects	C	34.74685	10.51026	0.0000			
	CAR1	1.648693	19.55973	0.0000			
	FCOST2	-0.417598	-1.269221	0.2047			
	OPEFF2	0.057370	3.434021	0.0006			
	AQ	-0.550469	-10.57387	0.0000			
	SIZE	6.57E-07	1.758359	0.0790	**0.611149**	**21.37488**	**1.460805**
	DACBTA	0.003434	0.708644	0.4787			
	NIM	-1.547991	-4.110281	0.0000			
	ROCE	-0.583392	-3.434143	0.0006			
	RONW	0.239559	2.795250	0.0053			
	LDR	-0.144766	-4.625845	0.0000			
Random Effects	C	29.09921	9.947457	0.0000			
	CAR1	1.298801	19.53295	0.0000			
	FCOST2	-0.055169	-0.177965	0.8588			
	OPEFF2	0.061816	3.725295	0.0002	**0.460402**	**80.11833**	**1.345972**
	AQ	-0.425973	-9.468942	0.0000			
	SIZE	7.07E-07	2.478779	0.0134			
	DACBTA	0.000482	0.169701	0.8653			
Random Effects	C	29.09921	9.947457	0.0000			
	CAR1	1.298801	19.53295	0.0000			
	FCOST2	-0.055169	-0.177965	0.8588			
	OPEFF2	0.061816	3.725295	0.0002			
	AQ	-0.425973	-9.468942	0.0000			
	SIZE	7.07E-07	2.478779	0.0134	**0.460402**	**80.11833**	**1.345972**
	DACBTA	0.000482	0.169701	0.8653			
	NIM	-1.319819	-3.718214	0.0002			
	ROCE	-0.209419	-1.442325	0.1495			
	RONW	0.129487	1.686322	0.0921			
	LDR	-0.161854	-5.465328	0.0000			
Hausman Test	**Chi-Square d.f**		**Chi- Square statistics**			**Probability**	
	10		**59.952344**			**0.0000**	

Note: Sample: 2000-2016.
Cross sections: 56
Total panel observations: 952
Source: Author's Computations

Table 6. Regression analysis (Model 3)

Model 3	Variables	Co-efficient	t-statistics	Probability	R^2	F-statistics	Durbin Watson
Pooled Effects	C	36.32062	9.134768	0.0000			
	CAR1	1.579054	17.99010	0.0000			
	FCOST2	-1.350585	-3.129754	0.0018			
	OPEFF2	0.027713	1.153941	0.2488			
	AQ	-0.447401	-6.344828	0.0000			
	SIZE	7.95E-07	2.368377	0.0181	**0.538307**	**19.2485**	**1.448830**
	DACBTA	0.009439	3.079178	0.0021			
	NIM	-1.267247	-2.586388	0.0098			
	ROCE	0.314898	1.648522	0.0996			
	RONW	-0.060650	-0.590207	0.5552			
	LDR	-0.012495	-0.151382	0.8797			
Fixed Effects	C	50.01534	10.96665	0.0000			
	CAR1	1.479085	12.75286	0.0000			
	FCOST2	-2.147651	-4.761262	0.0000			
	OPEFF2	0.019978	0.874687	0.3820			
	AQ	-0.737322	-7.727910	0.0000			
	SIZE	9.17E-07	1.778122	0.0757	**0.616636**	**21.82594**	**1.733439**
	DACBTA	-0.014971	-2.249755	0.0247			
	NIM	-1.339388	-2.563830	0.0105			
	ROCE	0.063634	0.273940	0.7842			
	RONW	-0.038869	-0.331744	0.7402			
	LDR	0.240181	2.218179	0.0268			
Random Effects	C	40.75395	9.937225	0.0000			
	CAR1	1.503901	16.13618	0.0000			
	FCOST2	-1.600506	-3.786835	0.0002			
	OPEFF2	0.023482	1.035794	0.3006			
	AQ	-0.535723	-7.242112	0.0000			
	SIZE	7.88E-07	2.040125	0.0416	**0.430526**	**70.83768**	**1.563520**
	DACBTA	0.005511	1.449685	0.1475			
	NIM	-1.297211	-2.668396	0.0078			
	ROCE	0.283980	1.425849	0.1542			
	RONW	-0.086032	-0.820863	0.4119			
	LDR	0.063969	0.730187	0.4655			

Hausman Test	**Chi-Square d.f**	**Chi- Square statistics**	**Probability**
	10	**49.977026**	**0.0000**

Note: Sample: 17 years
Cross sections: 56
Total panel observations: 952
Source: Author's Computations

Table 7. Regression analysis (Model 4)

Model 4	Variables	Co-efficient	t-statistics	Probability	R^2	F-statistics	Durbin Watson
Pooled Effects	C	3.132425	4.977087	0.0000	**0.284611**	**37.35718**	**1.412855**
	CAR1	0.169785	12.28427	0.0000			
	FCOST2	0.319025	4.494525	0.0000			
	OPEFF2	0.000953	0.240288	0.8102			
	AQ	0.010247	1.039475	0.2989			
	SIZE	7.32E-08	1.324774	0.1856			
	DACBTA	0.002576	5.094814	0.0000			
	NIM	-0.489187	-6.062109	0.0000			
	ROCE	0.070138	2.274818	0.0231			
	RONW	-0.033006	-1.963137	0.0499			
	LDR	-0.059586	-8.865521	0.0000			
Fixed Effects	C	6.120065	8.632502	0.0000	**0.463850**	**11.76601**	**1.767690**
	CAR1	0.183146	10.13216	0.0000			
	FCOST2	0.000497	0.007051	0.9944			
	OPEFF2	0.000477	0.133153	0.8941			
	AQ	-0.042556	-3.811954	0.0001			
	SIZE	2.53E-07	3.160165	0.0016			
	DACBTA	0.002720	2.617768	0.0090			
	NIM	-0.420446	-5.205904	0.0000			
	ROCE	-0.070723	-1.941339	0.0525			
	RONW	0.026213	1.426304	0.1541			
	LDR	-0.034261	-5.105175	0.0000			
Random Effects	C	4.490685	6.876815	0.0000	**0.197936**	**23.17292**	**1.609512**
	CAR1	0.163472	10.89506	0.0000			
	FCOST2	0.147620	2.187927	0.0289			
	OPEFF2	0.000637	0.178596	0.8583			
	AQ	-0.012723	-1.276870	0.2020			
	SIZE	1.52E-07	2.314203	0.0209			
	DACBTA	0.002591	3.806231	0.0002			
	NIM	-0.444729	-5.751892	0.0000			
	ROCE	0.013877	0.428810	0.6682			
	RONW	-0.008104	-0.478435	0.6325			
	LDR	-0.044597	-6.914170	0.0000			

Hausman Test	Chi-Square d.f	Chi- Square statistics	Probability
	10	**65.151558**	**0.0000**

Note: Sample: 17 years
Cross sections: 56
Total panel observations: 952
Source: Author's Computations.

Table 8. Summary of all models

Particulars	Model 1	Model 2	Model 3	Model 4
R- Square	56.12%	61.12%	61.67%	46.38%
Liquidity				
Durbin–Watson	1.25	1.46	1.73	1.76

Source: Author's Compilation

6. Conclusion and Discussion

Maintaining an adequate level of liquidity is very crucial for the bank; failure to do so can lead to the liquidation of the banks. The results of the present study are consistent with past research findings. Jeevarajasingam (2014), Roman and Sargu (2015) suggested that authorities should issue guidelines for maintaining the balance between liquidity and other determinants. There is a higher level of requirement for scheduled commercial banks in India to pay emphasis on developing an effective strategy for managing liquidity problems. The present study has analyzed the liquidity risk considering four different proxy measurements of liquidity in different models. In a corporate financial setup, the sustainability and success of the Indian banking system are found to be the most important aspects as they can pave the way for minimizing the financial risk associated with financial transactions. A downfall in banks will lead to a domino impact on the banking system (Sukmana & Suryaningtyas, 2016). Therefore, the bank regulators should take stringent actions to improvise liquidity risk management practices (Mohammad, 2020). The regulators should focus on factors such as loan-deposit ratio, profitability (NIM), capital adequacy ratio, funding cost, asset quality, and deposits as they significantly influence bank liquidity. The results were similar to the study by Sheefeni (2016), which showed a positive impact of capital adequacy ratio on bank liquidity (Singh & Sharma, 2016; Ratemo & Ndede, 2021). A similar study that depicts a positive relationship between bank liquidity and asset quality was conducted by Khoury (2015).

7. Limitations and Future Scope of Study

The present study is based on an in-depth analysis of only bank-specific determinants influencing liquidity risk and is taking into consideration only one particular category of banks, i.e. scheduled commercial banks. Future studies could focus on macro-economic determinants of liquidity risk. Besides, this researcher can compare different categories of banks such as scheduled and unscheduled banks, foreign banks and co-operative banks, etc.

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Factors Contributing to Talent Management and its Relation to Employee Retention in the Manufacturing Sector: A Study of Technical Employees in India

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Abstract

Talent Management is the key to success in cut-throat competition and talent scarcity in the market. This study tries to explore various talent management factors associated with employee retention. The researcher identified seven antecedent variables and also examined their relationship with employee retention. This study was conducted explicitly for technical employees working in the manufacturing sector of Uttarakhand. All major industrial clusters were considered for the data collection; 384 samples were collected and analyzed using Smart-PLS software. The study revealed a significant relationship between talent management and employee retention.

Keywords: *Talent Management, Employee Retention, Manufacturing Sector, SMART-PLS, India*

1. Introduction

Talent management is affected by talent scarcity and human resource management challenges; the interconnectedness of the supply chain and the businesses has invariably affected the demand for white-collar and blue-collar employees. Today's talent scarcity forces manufacturers to innovate and think beyond their boundaries to leverage creative talent sourcing practices to understand and develop global talent competencies as well as Glocal (a mixture of global and local) organizational cultures, employee value proposition and employee brands to sustain and provide solutions to manage talent. The definition of talent management revolves around the additional management opportunities and the creation of a process to make available to the organization people who are considered talented (Blass, 2007; Minbaeva et al., 2019; Metcalfe et al., 2020; Pandey & Kaur, 2021). A qualified employee is the most critical driver in the organizational setup and has been acknowledged across the industry. Talent scarcity is also a threat to business success (Chambers et al., 1998; Farndale et al., 2015; Pandey et al., 2021; Scullion et al., 2009). Companies have finally understood the need for talent management and have started to invest technically to overcome the problems related to retention and attraction of good employees (Marler, 2011; Pandey & Kaur, 2019; Van Zyle et al., 2021).

The growth of the gross domestic (GDP) is an acceptable measure of the rate of industrial development; India's GDP growth was only 5.8 per cent in the periods 1980-90 and 1990-96 as compared to 10.2 and 12.3 per cent respectively for China; 9.4 and 7.3 per cent for South Korea and 7.6 and 8.3 per cent for Thailand (Upadhyay & Kanavi, 1999). This state of affairs further emphasizes the pressing need for a higher pace of industrialization. Since the economy's manufacturing sector provides the primary thrust, this sector must also grow at a higher rate. In this area, too, we have not performed well as compared to other nations. India's rate of growth in the manufacturing industry was only 7.4 and 7.5 per cent for the periods 1980-90 and 1990-96, respectively.

2. Literature Review

2.1 Underpinning Theories

Five theories form the base of the idea of talent management. These theories are summarized as below:

2.1.1 Resource-based View

This theory tries to explain how some companies can sustain in a hyper-competitive environment and, consequently, are in a superior position and earn higher profits than their counterparts (Conner, 1991; Dierickx & Cool, 1989; Wernerfelt, 1995; Robledo-Ardila & Román-Calderón, 2020). Amit and Schoemaker (1993) explored the causes of gain in the firm's unique resources and competencies. These isolating instruments include situations where: it is tough or even difficult to relate the magnitudes or effects of an occurrence to its initial states or sources, and policymakers find it tough to comprehend the relationship between organizational responses and outputs, referred to as "causal ambiguity"- the set of choices one faces for any given situation is limited by the choices one has made earlier, although, past situations may no longer be relevant (path dependency). We consider the company's resource-based view (RBV) and use it as a lens to discover and review talent-management practices.

2.1.2 Herzberg's Theory

This theory belongs to the content theory of motivation. It provides an extension of Maslow's need hierarchy theory. In 1959, Frederick Herzberg suggested a theory having two categories of factors that act as motivators, namely, motivators and hygiene factors. According to this theory, some work-related factors results in satisfaction while other work factors avert displeasure. This theory forms the basis of the talent management strategy that proper segregation of factors is required to manage talent and retain them; otherwise, no policy will prove useful.

2.1.3 Human Capital Theory

The human capital theory considers the financial view; it emphasizes talent management as an investment in human capital that gives stakeholders a high return (Axelrod et al., 2001). Furthermore, the researchers keep talent management investment, such as training, equivalent to capital goods and technology investment (Becker, 1964). This viewpoint discloses that productivity can be improved by investing in talent through training, education, performance management, and rewards.

2.1.4 Referent Cognitions Theory (RCT Theory)

Folger (1986) put forward RCT theory, which considered individual context. This theory suggested ways to make talent management effective. They emphasized that if your policies are fair and development-oriented and are being perceived as useful for individuals in making their current situation better than before- it will be taken up wholeheartedly by the employees. On the other hand, the self-interest theory supports the same idea as referent cognitions theory. In a work environment where talent

management practices don't support their individual needs and seem unfair, unclear, and inequitable, it will have a reverse effect, and ambiguity and feeling of injustice will lead to low productivity or no development as such (Thibault & Walker, 1975).

2.1.5 Person-Environment Fit Theory (P-E Fit)

This theory was given by French and Kaplan in 1972. This theory instils a person's misfit's idea due to multiple reasons that make them leave, not the organizational policies. This theory helped in understanding personal reasons or factors which play an important role in employee retention. It deals with the compatibility of the person and the organization.

2.2 Conceptual Model:

This model is curated from the literature review and theories related to human resource management. The details of these variables are as follows:

TIP- Talent Identification and Planning

TA- Talent Acquisition

TLM- Talent Learning & Planning

LCD- Leadership and Career Development

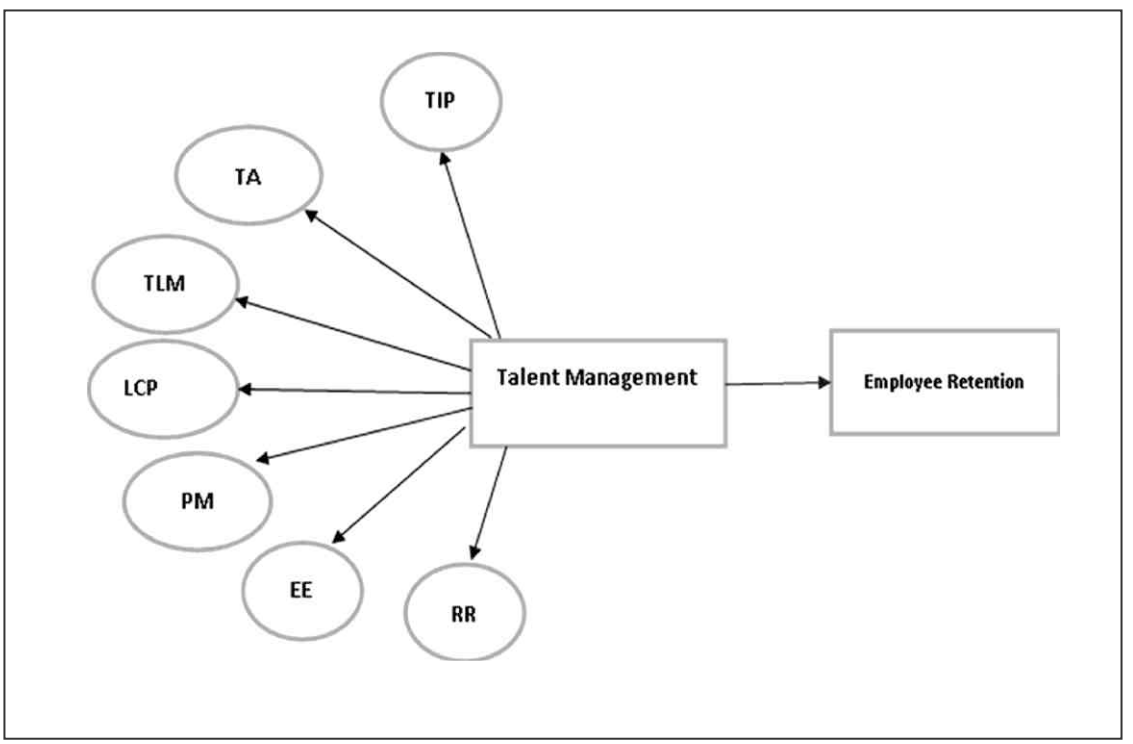
PM- Performance Management

EE-Employee Engagement

RR- Reward & Recognition

3. Research Methodology

This study is descriptive and tries to understand the different talent management practices used for technical employees of the manufacturing units located in Uttarakhand industrial sector. Five industrial estates are located in Uttarakhand, the focal point for sample design and the blueprint that provides the scope of the research. A total of 10522 companies were selected. The top 3 organizations from each industrial estate will be selected based on different criteria: market capitalization, market leadership, and a minimum of five years of existence of the organization or strength of the workforce, which should be a minimum of 100. A simple random sampling technique is adopted to obtain the sample. The researcher has identified 544 companies in total working under these industrial estates. Out of the total 544 companies, 129 companies come under this criterion with a total population of 132625. The researcher has excluded small and medium-size companies since the large



Source: Extracted from Literature

Figure 1. Conceptual Model of the Relation between Talent Management and Employee Retention

companies follow a systematic Talent Management system and cannot be compared with small and medium-sized companies. Sample size was selected using the following formula. Hair et al. (2011) have also suggested a formula for sample selection, i.e. a minimum and maximum of ten samples per observation (Cochran 1997).

n = N / (1+Ne2).

n = 132625 / (1+ 132625(0.05*2)

n =384

4. Data Analysis and Results

Data analysis is done using Smart-PLS. The demographic characteristics of samples are shown in Table 1.

4.1 Structural Equation Modeling

SMART-PLS is used to validate the model as it has both reflective and formative constructs (Ali et al., 2018). It has extensively been used these days for survey analysis (Herath & Rao, 2009; Simkin & McLeod, 2010). The general assumption is that the sample size should be approximately ten times the largest model indicators (Peng & Lai, 2012). Our model has seven talent management dimensions; a minimum sample size of 98 was needed to generate a power of 0.80 with a medium effect size (Hair et al., 2017; Hair et al., 2018). However, we collected data from 384 technical employees that generated a power of around 0.99 for our PLS model; thus, the sample size exceeds the minimum requirement. A two-way analysis approach given by Anderson & Gerbing (1988) was used to evaluate the model measures and further the path relationships and Goodness of Fit.

Table 1. Description of Demographic Data

Variables	Frequency	Percentage
Age		
Less Than 40	188	51.8
More than 40	196	48.2
Gender		
Male	329	85.7
Female	55	14.3
Level of Management		
Lower level	215	56
Middle level	126	32.8
Higher-level	43	11.2
Year of Service		
Less Than 5 years	143	37.2
5 Years and Above	241	62.8

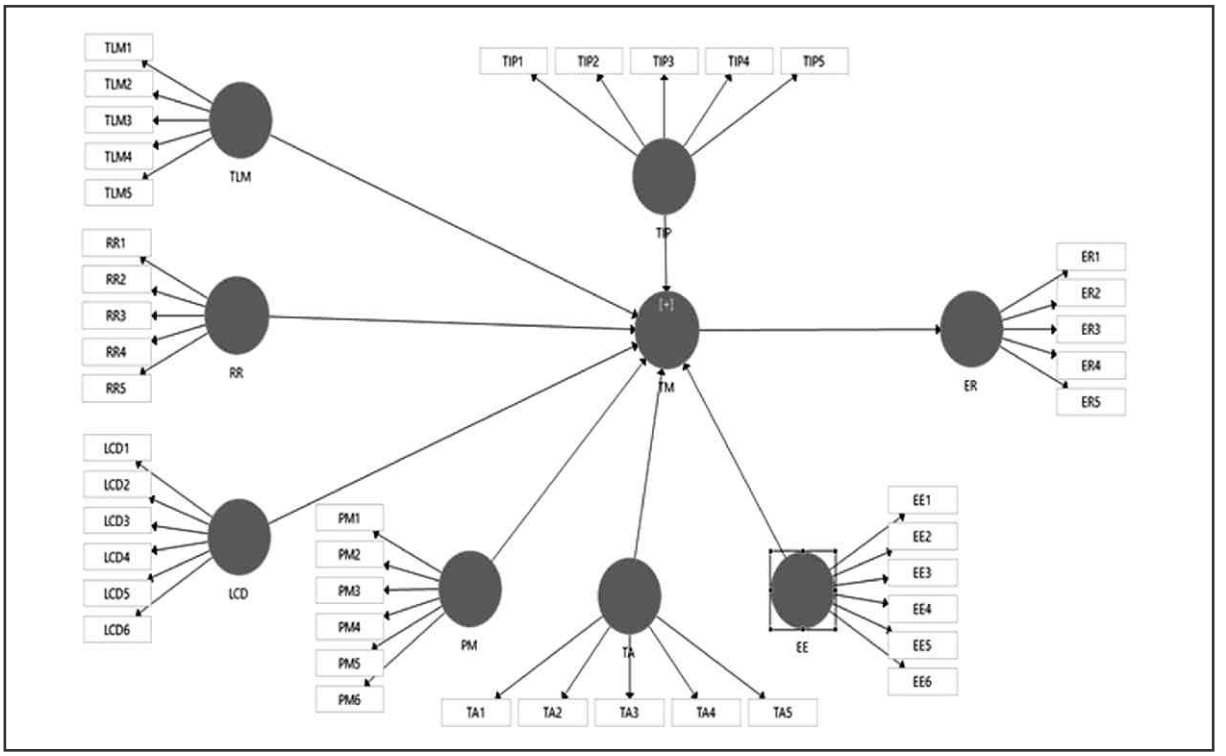


Figure 2. Proposed Conceptual Model

Table 2. Indicators of Constructs

Talent Management Dimension (First order construct	The Manifest Variable of the First -Order Construct	Number of Manifest Variables
Talent Acquisition	TA1, TA2, TA3,TA4,TA5	5
Talent Identification and Planning	TIP1, TIP2, TIP3, TIP4, TIP5	5
Learning and Motivation	TLM1, TLM2, TLM3, TLM4, TLM5	5
Leadership and Career Development	LCD1, LCD2, LCD3, LCD4,LCD5,LCD6	6
Performance Management	PM1, PM2, PM3, PM4, PM5,PM6	6
Employee Engagement	EE1.EE2,EE3,EE4,EE5,EE6	6
Rewards and Recognition	RR1,RR2,RR3,RR4,RR5	5
Total items:		**38**

4.2 Common Method Bias Test

We used the correlation matrix procedure to resolve the issue of the same group of respondents (Yüksel, 2017; Guide & Ketokivi, 2015). Large correlations ($r > 0.9$) among the study constructs show the existence of bias (Bagozzi, Yi & Phillips, 1991). The same process was followed, and no construct was correlated with a value more than 0.9, as shown in Table 3. So no bias is found in the study. Since no issue of common bias is found, data is safe for further analysis.

4.3 Measurement Model Assessment

The analyzed model is reflective-formative (Yildirim & Correia, 2015). In phase one, all seven dimensions were assessed, and second-order was analyzed using the value of first-order (Fornell & Larcker, 1981). All internal reliability values were as per the prescribed limit of above 0.70 (Hair et al., 2017; 2020).

The convergent validity was assessed using the AVE scores and found to be above the threshold value of 0.50. The HTMT values in this study were more than 0.80. Speaking about the reliability factor for the full-fledged data, Table 4 depicts that talent acquisition has a Composite Reliability (C.R.) value of 0.797; talent retention is 0.755; learning and development are 0.737; C.R. of career management is 0.842, and that of performance management is 0.770. The values are above the requisite reliability; hence convergence of all variables is established.

Table 3. Latent Variable Correlation Matrix

	EE	ER	LCD	PM	RR	TA	TIP	TLM	TM
E.E.	**1**								
ER	0.814	**1**							
LCD	0.616	0.593	**1**						
PM	0.467	0.535	0.501	**1**					
RR	0.115	0.235	0.07	0.124	**1**				
TA	0.244	0.303	0.309	0.303	0.058	**1**			
TIP	0.343	0.427	0.355	0.562	0.143	0.402	**1**		
TLM	0.244	0.229	0.233	0.244	0.021	0.409	0.409	**1**	
TM	0.806	0.768	0.821	0.837	0.215	0.549	0.721	0.499	**1**

Table 4. Quality Criterion for the Reflective Model (Assessment of AVE, C.R., Cronbach's Alpha, and Rho_A)

Constructs	Items	Factor Loadings	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Employee Engagement	EE1	0.753	0.896	0.897	0.896	0.589
	EE2	0.764				
	EE3	0.775				
	EE4	0.733				
	EE5	0.812				
	EE6	0.767				
Employee Retention	ER1	0.745	0.848	0.853	0.85	0.533
	ER2	0.736				
	ER3	0.767				
	ER4	0.763				
	ER5	0.629				

Leadership and Career development	LCD1	0.822	0.943	0.946	0.944	0.737
	LCD2	0.937				
	LCD3	0.888				
	LCD4	0.891				
	LCD5	0.824				
	LCD6	0.78				
Performance Management	PM1	0.814	0.928	0.929	0.928	0.683
	PM2	0.829				
	PM3	0.861				
	PM4	0.86				
	PM5	0.782				
	PM6	0.809				
Rewards And Recognition	RR1	0.736	0.937	0.941	0.937	0.748
	RR2	0.912				
	RR3	0.91				
	RR4	0.848				
	RR5	0.906				
Talent Acquisition	TA1	0.664	0.867	0.878	0.87	0.576
	TA2	0.685				
	TA3	0.727				
	TA4	0.851				
	TA5	0.847				
Talent identification & Planning	TIP1	0.669	0.882	0.887	0.883	0.604
	TIP2	0.827				
	TIP3	0.766				
	TIP4	0.831				
	TIP5	0.78				
Talent Learning and Motivation	TLM1	0.908	0.935	0.935	0.935	0.741
	TLM2	0.832				
	TLM3	0.864				
	TLM4	0.862				
	TLM5	0.835				

4.4 Structural Model Assessments

The associations between constructs and their predictive nature were examined in structural model assessments (Hair et al., 2017). The recommended 5000 bootstraps were framed for the study (Hair et al., 2020). Firstly, VIF values were calculated to check the colinearity issue (Cassel et al., 1999), which were found to be below 3.33 (Diamantopoulos et al., 2008). Table 5 results revealed that talent management is the most prominent feature which positively influences employee retention.

Table 5. Discriminant Validity Fornell-Larcker Criterion

	EE	ER	LCD	PM	RR	TA	TIP	TLM	TM
EE	**0.804**								
ER	0.758	**0.750**							
LCD	0.606	0.583	**0.849**						
PM	0.457	0.525	0.501	**0.816**					
RR	0.114	0.245	0.06	0.114	**0.855**				
TA	0.234	0.313	0.308	0.302	0.048	**0.748**			
TIP	0.333	0.426	0.345	0.511	0.133	0.302	**0.757**		
TLM	0.244	0.229	0.233	0.244	-0.021	0.409	0.409	**0.761**	
TM	0.806	0.730	0.721	0.517	0.215	0.539	0.721	0.499	**0.515**

Table 6. HTMT Ratio of Correlations

	EE	ER	LCD	PM	RR	TA	TIP	TLM	TM
EE									
ER	0.808								
LCD	0.616	0.583							
PM	0.466	0.536	0.489						
RR	0.115	0.234	0.07	0.114					
TA	0.24	0.304	0.309	0.306	0.058				
TIP	0.345	0.428	0.352	0.561	0.14	0.406			
TLM	0.244	0.227	0.232	0.243	0.039	0.411	0.402		
TM	0.746	0.743	0.757	0.799	0.362	0.624	0.752	0.575	

Table 7. VIF values

Formative Constructs	VIF values
EE	1.632
LCD	1.72
PM	1.674
RR	1.027
TA	1.236
TIP	1.63
TLM	1.23

4.5 CFA for Talent Management and Employee Retention:

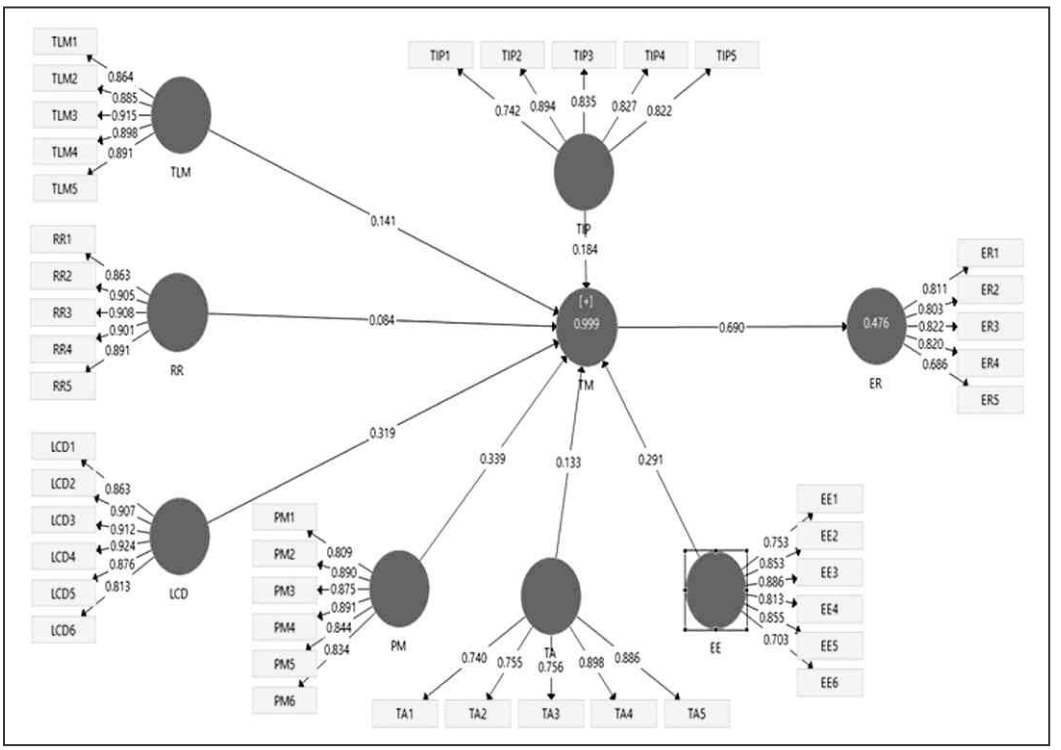


Figure 3. PLS Model for Talent Management Influencing Employee Retention – Manufacturing Sector

Table 8. Regression Values for the Talent Management Results in Retention (All Items)

Talent Management Dimensions (First order construct		The manifest variable of the first-order construct	Sample Mean	S.E	C.R	p-value
Talent Management	<---	Talent Acquisition	0.122	0.014	7.611	0.00*
Talent Management	<---	Talent Identification and planning	0.172	0.013	11.881	0.00*
Talent Management	<---	Learning and Motivation	0.13	0.018	6.263	0.00*
Talent Management	<---	Leadership and Career Development	0.216	0.016	17.161	0.00*
Talent Management	<---	Performance Management	0.227	0.018	17.14	0.00*
Talent Management	<---	Employee Engagement	0.278	0.01	13.446	0.00*
Talent Management	<---	Rewards and Recognition	0.071	0.013	2.388	0.00*
Employee Retention	<---	Talent Management	0.581	0.021	12.167	0.00*

*Note: *Important at 5% Significance Level*

4.6 Evaluation of Predictive Relevance (Q2): According to Chin et al. (2008), Q2 can be used as a sample reuse criterion. It is used as the validity of prediction through the blindfolding procedure. Table 9 shows that 0.278 was the Q2 value for talent management. It represents medium to large relevance for the endogenous construct (talent management).

5. Discussion and Implications of the Study

A theoretical framework was introduced in this paper and how influential these factors are in retaining talented employees. The current paper offers insight for HR practitioners and people working in academic circles. Employee engagement is found to be a strong factor in employee retention, as cited by many researchers as well. The above analysis and exploration of theories give a clear view of various components of an effective talent management system. Consequently, all companies must incorporate talent identification, planning, acquisition, development, and retention strategy in line with the organizational strategy to optimize talent management benefits. The company's initiative based on a talent management strategy will make employees more engaged and productive in the long run.

6. Conclusion

The success of any organization depends on the quality of its human capital. Workforce challenges and rapidly changing environment are the key causes why organizations need to adopt talent management and its effectiveness to retain talented employees and gain a competitive advantage**.** It's imperative to create a precise and proper system to manage employee turnover. In summing up, all modern organizations have realized the significance of acquiring, developing and retaining their talent to survive in the competitive market. Talent management is the most effective way of retaining employees in the manufacturing sector. The effectiveness of their system has proved positive outcomes for the employees in many ways. Continuous skill up-gradation is also needed for retaining the technical workforce.

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Table 9. Q^2 of Talent Management

	SSO	SSE	Q^2 (=1-SSE/SSO)
EE	2203	2103	
ER	1810	1245.428	0.283
LCD	2203	2203	
PM	2103	2103	
RR	1810	1810	
TA	1810	1810	
TIP	1810	1810	
TLM	1810	1810	
TM	13865	10558.164	0.278

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Ownership based Ethnocentrism Tendencies: its Antecedents and Impact on Domestic- owned/ Foreign-owned Product Purchase of Indian Consumers

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Abstract

Consumer ethnocentrism studies are grounded on either country of manufacture (COM) or country of origin (COO). In the current multinational context, a product is attributed to several countries. So, deriving the degree of ethnocentric tendencies, focussed on either COM or COO, restricts the robustness of the after-effects of consumer ethnocentrism studies. Therefore, this research proposes a lens for socio-economic sustainable development by adding a new dimension: country of ownership to the field of consumer ethnocentrism studies. In the light of ownership-based ethnocentric tendencies (OCET), the paper studies the antecedents of cosmopolitanism and demographic variables. It also tests OCET with relation to the final purchase of foreign and domestic-owned brands for hair care and skincare products (shampoo, hair oil, hair colour, soap, cream, and face-wash). This research then measures the accuracy of knowledge of brand ownership (BOWRECA). The results are processed by using AMOS and SPSS. The findings support an inverse relationship between OCET and cosmopolitanism. The relationship between demographic antecedents and the role of OCET in final product purchase varies considerably. The research is of utmost importance for marketers, policymakers, and consumers. The suggested new dimension, if used judicially, will lead to socio-economic sustainable development, as due to COVID-19, countries are forced to be self-reliant and re-invent the power of domestic production.

Keywords: *ownership-based ethnocentric tendencies, ethnocentrism, product purchase, foreign-owned, domestic-owned, self-reliance, sustainable development, knowledge of brand ownership*

1. Introduction

The year 2020 witnessed a significant catastrophe in the world economic scenario, wherein markets shattered and numerous enterprises suffered liquidation (Scigliuzzo et al., 2020; Jha & Sahni, 2020; The World Bank Group, 2020). The subsequent outcome, global economic depression, is highly attributed to the epidemic COVID-19. One of the reasons for such an enormous downfall of the global economy is over interdependence of countries on each other. In concurrent conditions, approximately all the countries are interconnected and interdependent. The concept of a self-reliant nation is assumed to be restricted to the theories of Dada Bhai Naroji and Mahatma Gandhi (Sarkar, 1973).

The same phenomenon is occurring in India. Indian markets are over flooded with a plethora of foreign-owned brands even before independence. This interdependence between nations was augmented by the opening up of trade boundaries by the liberal trade policy introduced in 1991. Since then, economic borders have welcomed direct foreign investments in varied segments, which strengthen the dominance of foreign companies over domestic ones. These multinational companies outsmart domestic companies through their wide product portfolio backed by strong research and technological development and huge capital investments. Hostile takeovers and aggressive strategies pose severe competition to the domestic companies and propel a requirement to study the consumer behaviour to incorporate global business practices.

Consumer behaviour is propelled by various attributes; preference towards the domestic product is one of them (Balabanis & Diamantopoulos, 2004). The term coined for preferring domestic products over foreign products is called as Ethnocentrism.

Ethnocentrism is a wide term encompassing a wide range of activities to differentiate between in-group and out-group. One such grouping is defined by Shimp and Sharma (1987) and is termed as consumer ethnocentrism. Later, several types of research were conducted to identify the antecedents and precedents of consumer ethnocentrism to identify the intention of buying domestic and foreign goods (Kuncharin & Mohamed, 2014; Alpaslan, 2014; Kumar et al., 2011; Cleveland et al., 2009). Almost all consumer ethnocentrism researches have focused on the “made in” dimension of the product. All the previous ethnocentrism studies are grounded on:

- place of manufacture (Shimp & Sharma, 1987);
- domestic product and service (Banerji & Mishra, 2018; Denisa & Gabriela, 2016; Sadachar & Chakraborty, 2019);
- domestic vis-à-vis foreign goods (Kumar et al., 2011; Modi, 2017);
- foreign made products (Mirzaeifar, 2015; Das & Saha, 2017) and
- country of origin (Kinra, 2006; Ramsaran, 2015).

The globalised arena led the transnational and global companies to "manufacture a product in India, which is originated, owned and patented by the USA, led by a research and development team of Japan, in collaboration with German technology and raw material procurement from Africa manufactured by the Chinese workforce" (Agarwal & Nandram, 2020).

In such a multi-country affiliation context, even if the product is manufactured in India, as the previous ethnocentrism research studies explore, the major benefits of in-group patriotism cannot be fully achieved. A foreign-owned company is of comparatively less relevance to the nation's economy than a domestic-owned company (Agarwal & Nandram, 2020). Therefore, a need to study consumer ethnocentrism from the perspective of the country of ownership is deployed. Bryant and Goldberg (2012) and Li et al. (2000) have also cited the relevance of Country of Ownership. In the transnational transitional economies, interdependence between nations has resulted in the reduction of self-reliant, sustainable development. Sarma and Talukdar (2019) considered Swadeshi products to be instrumental in achieving self-reliance. Tilley and Parrish (2017) assigned entrepreneurship to be phenomenal in ensuring the sustainable economic development of the nation.

Indian markets witness a plethora of foreign-owned products being manufactured in India wherein huge dividends and royalties are being paid to MNC's respective homelands, thus causing a heavy outflow of funds. For example, HUL was accounted to pay INR 6450 million in FY 18-19 to its parent company, Unilever (Annual Report of Hindustan Unilever Limited, 2019).

Therefore, this study is conceptualised to give a new dimension to ethnocentric studies. The research investigates the ethnocentric tendencies on the ground of the country of

ownership of the products and adds a new perspective to the research literature of consumer ethnocentrism. It does not intend to challenge the existing ethnocentrism studies; rather, it focuses on a resilient approach to "ownership" in the emerging and ever-evolving transnational context. Thus, let us study Ethnocentrism using the 'Country of Ownership' as a new dimension.

Developing countries like India are a hub for the manufacturing of foreign-owned goods. Foreign marketers need to understand the perception of Indian consumers based on ownership-based ethnocentrism tendencies (OCET).

Domestic manufacturers need to study the consumer's behaviour on the dimension of OCET to gain the advantage of being a local manufacturer. The policymakers also need to understand the consumer's OCET, to facilitate an adequate market mix of foreign and domestic companies to promote social-economic sustainable development. New domestic entrepreneurs can be benefited from the study by understanding what consumers want, and it can be further used in restructuring domestic-owned marketing strategies. This research is also of importance to the non-government organisations that want to promote domestic-owned products to ensure the nation's self-reliance.

2. Objective of Study

The objective of the research is to test the structural relation between the constructs, assess the reliability and to test the hypothesis concerning their interrelationship. The objectives of the study can be illustrated as:

To discover the relation between cosmopolitanism and ownership-based Indian consumers' ethnocentrism.

To examine the relationship between demographic variables and OCET.

To measure the impact of OCET on final product purchase for hair shampoo, hair oil, hair colour, soap, face-wash, and cream in terms of domestic and foreign ownership of products.

To measure the impact of OCET on knowledge of brand ownership for shampoo, hair oil, hair colour, soap, face wash, and cream.

3. Research Gap

This research paper unfolds a new dimension in the study of ethnocentrism. Earlier, almost all the studies considered "the place of manufacture" in analysing the ethnocentric tendencies of individuals. But this research focuses on ethnocentric tendencies based on the "country of ownership" of the product.

The ownership perspective is of utmost importance for the macro analysis of nations' development, as the interdependence among various countries has led to the emergence of the issue of self-reliance. This is partly validated by the COVID-19 epidemic. However, the importance of the country of manufacture cannot be trivialised. The growing intermingling of the national borders in terms of product development has increased the challenges for the macro economy of the nation. It can be resolved by the microanalysis of the macro problem. This research studies the concept of ethnocentrism by studying the dimension of "Ownership" in place of "Manufacture" and measures the relation with socio-psychological variables and the impact of demographic antecedents on the ownership-based ethnocentrism. It further probes deeper the effect of ethnocentrism on consumers' final product purchase behaviour. It analyses the impact of ethnocentric tendencies on foreign-owned product purchase and domestic-owned product purchase.

4. Literature Review

4.1 Consumer Ethnocentrism

Shimp and Sharma (1987) studied the ethnocentric tendencies of consumers on the grounds of place of manufacture, coined the term "Consumer Ethnocentrism" (CET) and developed a measure called CETSCALE (consumer ethnocentric tendency scale). CETSCALE is revalidated to measure the ethnocentric tendencies of consumers of different locations, like Russia (Good & Huddleston, 1995), the U.S (Sharma et al., 1995), Belgium, Great Britain, Greece (Baumgartner & Steenkamp, 1998), Turkey (Kucukemiroglu, 1999; Kaynak & Kara, 2002), the U.K (Balabanis & Diamantopoulos, 2004), France (Javalgi et al., 2005), Ghana (Bamfo, 2012), Maldives (Cazacu, 2016), China (Zhang et al., 2014), Estonia and Slovenia (Parts & Vida, 2013), South Africa (Pentz et al., 2014), Mauritius (Ramsaran, 2015), and Tehran (Mirzaeifar, 2015).

The central idea of all the studies on consumer ethnocentrism is bifurcated in different product dimensions. Shimp and Sharma (1987) and Tantray and Sehgal (2017) explicitly mentioned place of manufacture.

Few researchers (Han, 1990; Herche, 1992; Olsen, 1993; Bruning, 1997; Klein et al., 1998; Suh & Kwon, 2002;

Balabanis & Diamantopoulos, 2004; Schiffman & Kanuk, 2007; Ramsaran, 2015; Banerji & Mishra, 2018; Denisa & Gabriela, 2016; Sadachar & Chakraborty, 2019) denote the product dimension with the abbreviation domestic product and services. The domesticity of the product is at times determined by the place of manufacture and at times is considered as a general term and is not explained. Various terms have been used by the researchers to study the ethnocentric tendency of the consumers of their respective locations (as elaborated in Table 1). Some use domestic vis-à-vis foreign goods, some clearly stated foreign-made products, and some mentioned country of origin.

Table1. Research on ethnocentrism and its centricity

Product and service dimension	Researcher	Year
Place of Manufacture	Shimp, T. and Sharma, S.	1987
	Tantray, S. and Dr. Sehgal, G.	2017
Domestic Product and Service	Han, C.M.	1990
	Herche, J.	1992
	Olsen, J.E. et al.	1993
	Bruning, E.R.	1997
	Klein, J.G. et al.	1998
	Suh, T. and Kwon, I-W.G.	2002
	Balabanis, G. and Diamantopoulos, A.	2004
	Schiffman & Kanuk	2007
	Ramsaran	2015
	Banerji, D and Mishra, P.	2018
	Denisa, S and Gabriela, C.	2016
	Sadachar, A. and Chakraborty, S.	2019
Domestic vis-à-vis foreign goods	Upadhyay, Y. and Singh, S. K.	2006
	Kumar, A. et al.	2011
	Modi, S.	2017
Foreign Made Products	Sharma et al.	1995
	Kim, S. and Pysarchik, D.T.	2000
	Watson, J. J. and Wright, K.	2000
	Moon, B.J. and Jain, S.C.	2001
	Zarkada-Fraser, A. and Fraser, C.	2002
	Bawa, A.	2004
	Kwak, H. et al.	2006
	Jain, S. and Jain, R.	2013
	Aziz, S. et al.	2014
	Mirzaeifar	2015
	Das, M. and Saha, V.	2017
	Nair, S., & Dhivya, K. N.	2017
Country of Origin	Kinra, N.	2006
	Ramsaran	2015
	Mirzaeifar	2015
Cross Border Shopping	Kuncharin, W., and Mohamed, B	2014
Foreign Marketers and Domestic Products	Bandyopadhyay, S.	2014
Same Origin, Ownership and Manufacture	Dasgupta, A. and Chandra B.	2016

Source: Own Elaboration

All these researches study the domesticity of the product on the basis of place of manufacture or took into account the country of the brand origin.

All the dimensions are centred on the origin of the product or the manufacturing, but the clarity on the domesticity of the product is vague owing to the present globalisation. The research by Kuncharin and Mohamed (2014) explicitly study cross border shopping. Research on Indian consumers by Bandyopadhyay (2014) explicitly mentioned Foreign Marketers and Domestic Products and attempted to study the present state of India in the globalised arena, but the dimension "foreign market and domestic product" is not explained clearly. However, a few pieces of research like Dasgupta and Chandra (2016) used the product Handicrafts, whose state of origin, manufacture and ownership is still not under the influence of globalisation. Das and Saha (2017) study and mention foreign goods for the rural population, but the constituents of foreign goods are not mentioned. Thus, almost none of the previous research focused on the ownership perspective of the ethnocentric tendencies.

The interdependent state of ownership across countries hampers their self-reliance in the long run (Agarwal & Nandram, 2020). This interference is detrimental to developed nations as well as developing countries.

Indian researchers have undertaken the study of ethnocentrism on the Indian population. This research has taken the modified version of the CETSCALE by further altering the statements on the grounds of the "Ownership" dimension and replaced the "Made-in-country" dimension.

4.2 Cosmopolitanism

Cosmopolitanism is a state of mind of considering oneself to be a member of the global civil society (Benhabib, 2008). It is the way of discerning, sensing and performing beyond one's particular society (Breckenridge et al., 2002). It sees human beings as metaphorically wearing the concept of world citizenship (Kleingeld, 2013), to regard the whole nation as one world and to buy products from different countries by considering themselves as global citizens, global consumers and global manufacturers. It is a result of macro interdependence with an acute consciousness of inescapability from a global perspective (Robbins, 1998). Rybina et al. (2010) measured the significant negative effect of cosmopolitanism on ethnocentrism (production-based) of Kazakhstan. The same negative relation was posited by Parts and Vida (2011).

This research measures the impact of cosmopolitanism on ownership-based ethnocentric tendencies of Indian consumers. Hence, we propose the following hypothesis:

H1: Cosmopolitan consumers show a direct and negative effect on OCET.

4.3 Demographic Antecedents

Research has proved the association between ethnocentric tendencies and the demographic characteristics of the consumers. Pentz et al. (2014), Petrovicova and Gibalova (2014), Renko et al. (2012), Aziz et al. (2014), Alpaslan (2014), Lopez et al. (2016) have agreed on ethnocentrism to be dependent on the demography of the respondents. Javalgi et al. (2005) identified that age, gender, education and income as demographic antecedents impact OCET. Therefore, this research measures the degree of the impact of age, gender, education, and income along with the nature of dwelling on OCET based on the dimension of the country of ownership.

Researchers like Brodowsky et al. (2004) found no considerable relation between education level and consumer ethnocentrism. Whereas De Ruyter et al. (1998), Watson et al. (2000), Lee et al. (2003), Balabanis et al. (2004), Javalgi et al. (2005) and Mati (2013) found less educated people to be more ethnocentric. Similarly, Keillor et al. (2001), Brodowsky et al. (2004) and Mati (2013) found no considerable relation between gender and consumer ethnocentrism. But, Balabanis and Diamantopoulos (2004), Han (1990), Kaynak and Kara (2002) recorded considerable gender differences. Therefore, it is hypothesised that,

H2a: Education of Consumer has a significant relationship with Consumer Ethnocentrism.

H2b: Indian Male Consumer shows lower ownership-based ethnocentric tendencies than Indian Female Consumer.

Few researchers like Sharma et al. (1995) and Festervand (1985) found no substantial relation between age and consumer ethnocentrism, whereas researchers like Watson et al. (2000), Vida et al. (2001), Lee et al. (2003), Balabanis et al. (2004), Mati (2013), and Han and Won (2017) identified the older generation to be more ethnocentric. Han (1990), De Ruyter et al. (1998) and Keillor et al. (2001) identified that income has no substantial relation with consumer ethnocentrism. At the same time, Tan and Farley (1987) identified a considerable positive association between the two. However, Mati (2013) found a negative association between income and OCET. Since income and

age as precedents of the production-based ethnocentric tendencies have yielded contradictory results in the previous literature, the testing of the following hypothesis provides an opportunity for resolving the conflict and exploring the horizon of OCET.

H2c: Older consumers exhibit significantly higher ethnocentric tendencies across the seven age categories of Indian consumers.

H2d: Higher-income group consumers are significantly less ethnocentric than lower-income group consumers.

In India, a significant demographic demarcation parameter is the nature of dwelling, which divides the OCET of consumers on the grounds of the urban and rural population; thus, this research also scrutinises the impact of the nature of dwelling on ownership-based ethnocentrism.

H2e: Rural consumers are significantly more ethnocentric than urban consumers.

4.4 Product Purchase Behaviour

Parts and Vida (2011) measured the consumer product purchase on the 5-point semantic differential scale, where the extremes indicated only domestic and only foreign. This research relies on the brand recall capacity of the consumers for the selected products (hair shampoo, hair oil, hair colour, soap, face-wash, and cream) and then converted these brands as foreign and domestic-based on their actual ownership status. The demarcation of domestic and foreign brands has been derived from the domestic product conceptualisation matrix of Agarwal and Nandram (2020). The presence of OCET influences the positive domestic product purchase behaviour and negative foreign purchase behaviour (Cleveland et al., 2009; Dmitrovic et al., 2009; Kaynak & Kara, 2002; Kim & Pysarchik, 2000; Watson & Wright, 2000; Rawwas et al., 1996; Sharma et al., 1995; Herche, 1992). Hence the same has been hypothesised for OCET.

H3: Ownership based Consumer Ethnocentrism in India is negatively influencing the final purchase of foreign-owned hair shampoo, hair oil, hair colour, soap, face wash, and cream.

4.5 Knowledge of Brand Ownership

The next objective in this study is associated with a comparatively new concept – consumers' knowledge of brand ownership. Based on the conceptual model of Parts and Vida (2011) and to fill the gap of the country of ownership study, this perspective is added to the present model. Riefler and Diamantopoulos (2009) have identified the country of origin effect on knowledge of brand origin. This research postulates to find the relation of ownership based ethnocentrism on brand ownership recall accuracy.

5. Research Model

As depicted in Figure 1, this research addresses a cavity in the field of consumer ethnocentrism and proposes a new dimension of the country of ownership to the manufacturing-based ethnocentric studies. It proposes to discover the new dimension of the CETSCALE, in the light of its demographic antecedents and studies the interrelation between the attitudinal standpoint of ownership-based ethnocentrism (OCET) and cosmopolitanism. It also studies the relationship of the demographic antecedents (age, income, education, gender and nature of dwelling) with ownership-based ethnocentric tendencies (OCET). It also finds the relation of ethnocentrism with the final ownership-based product purchase behaviour of the consumers and accuracy of recall of brand ownership (as depicted in Figure 1).

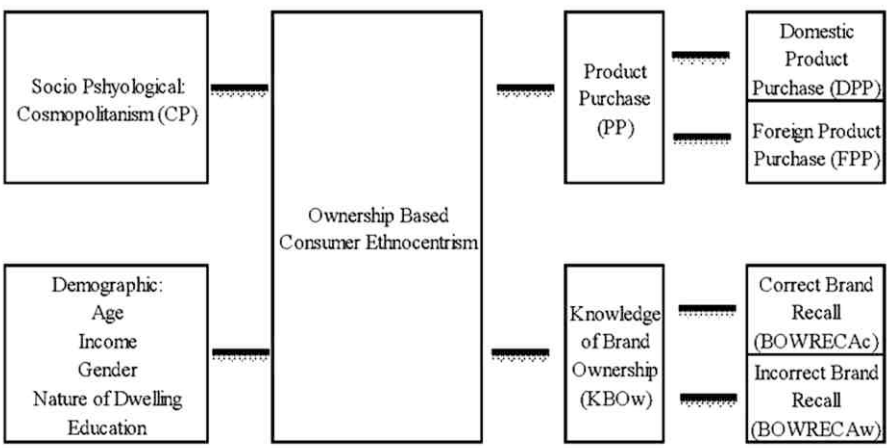


Figure 1. Research Model

6. Research Methodology and Instrument

6.1 Measuring Instrument

The data for the research is collected via a structured omnibus survey, which is adapted from the previous research of Shimp and Sharma (1987) and Parts and Vida (2016). Owing to the Indian circumstances, the questionnaire was brought down to 9 questions from seventeen original questions. To fit in the Indian perspective, the name of the country is considered as 'India', and to reach the goal of this unique research, the phrase "made in" location is replaced by "Indian-owned".

6.2 Sampling Data Collection

The population for this study is Indians above 18 years, consumers of hair shampoo, hair oil, hair colour, soap and cream, with no minimum income. The sampling technique is stratified convenience sampling. An invitation was sent to fill out the form on social media, apart from the physical distribution of the questionnaire. After contacting 3736 individuals, a valid response of 450 individuals was obtained with a response rate of 12.04%.

6.3 Data Analysis

The internal reliability of the CETSCALE was calculated by performing a reliability test- *Cronbach Alpha*. The mean score of 9 questions about consumer ethnocentric tendencies was calculated and named as CETscore.

1. Relation between Cosmopolitanism and OCET was derived by performing SEM analysis by using AMOS.
2. Hypothesis about finding an effect of the demographic variables on OCET were tested by performing one-way analysis of variance (ANOVA). In case of substantial significance, a *post hoc* analysis employing Tukey's method in case of "equal variances assumed" and Games-Howell in case of "equal variance not assumed" was performed after executing homogeneity of variance test to identify the difference between the sub-groups.
3. Relation between ownership-based brand preference and OCET was identified by performing a T-test.
4. Relation between knowledge of brand recall accuracy and OCET was identified by performing cross tab descriptive statistics.

7. Research Findings

The reliability of ethnocentric tendencies is ascertained by Cronbach's Alpha. The results are listed in Table 2.

Cronbach's alpha of nine questions about ethnocentrism is 0.892. It demonstrated a high level of consistency among questions about measuring ethnocentric tendencies.

7.1 Relation of Cosmopolitanism and Ownership-based consumer ethnocentrism

One way ANOVA of the two constructs represents a significant relationship. To explore further, we further performed structured equation modelling by Amos 20, and the results depicted an inverse relationship between the two constructs, cosmopolitanism and ethnocentrism.

Standardised residuals should not be greater than 2.58, as specified by Bawa (2004), which is correct in the case of this model. It matches the other requirements of GFI to be higher than 0.9 and AGFI to be higher than 0.9. RMSEA is moderate within the required measurement. As per the norms established, it should be less than 0.10, and in this model, it is 0.068. CFI is also 0.967 above the specified norm of >0.9. The same is the case of NFI, which is 0.953, slightly higher than the specified norm of 0.95. The correlation coefficient is -0.12 indicating a negative correlation between ethnocentrism and cosmopolitanism. The results are depicted in Table 3, and the structured equation model for representing the relationship between OCET and Cosmopolitanism is presented in Figure 2.

Table 2. Reliability

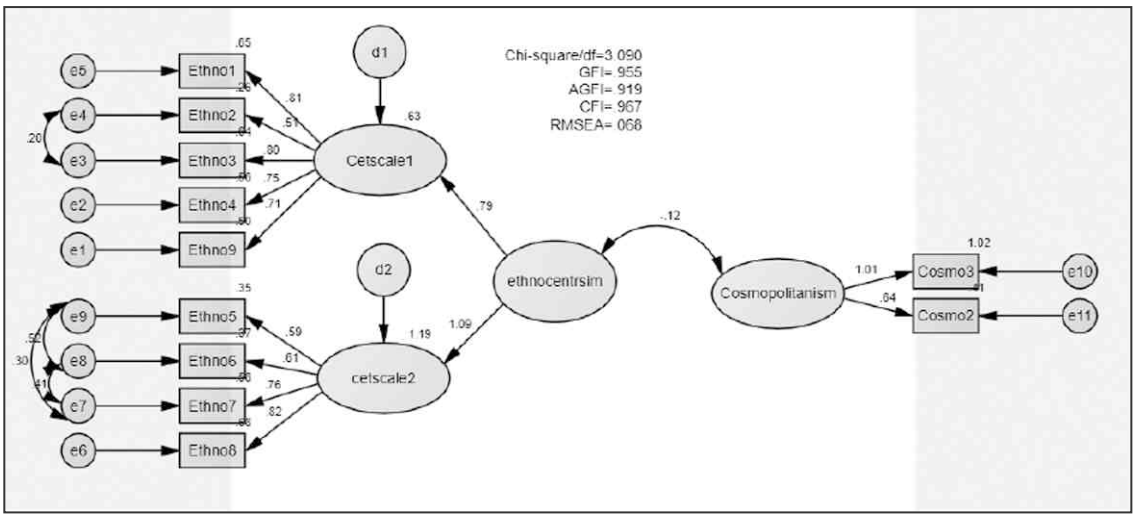
Cronbach's Alpha	N of Items .
892	9

Source: Research Findings (N=450)

Table 3. Results of SEM

S.No	Indicator	Results
1	Goodness of fit index (GFI)	0.955
2	Adjusted goodness of fit index (AGFI)	0.919
3	Root mean square error of approximation (RMSEA)	0.068
4	Comparative fit index (CFI)	0.967
5	Normed fit index (NFI)	0.953
6	Parsimony normed fit index (PNFI)	0.641
7	Tucker Lewis Index (TLI)	0.951
8	Parsimony comparative fit index (PCFI)	0.651

Source: Research Findings (N=450)



Source: Research Findings (N=450)

Figure 2. SEM for finding a correlation between Ethnocentrism and Cosmopolitanism

7.2 Effect of Demographic Variables on OCET

The ANOVA test found no significant relation concerning education, gender and nature of dwelling and OCET, thereby accepting null hypothesis H2a, H2b and H2e. Significant relation is established among the age group and OCET by performing ANOVA. The test of homogeneity of variance is significant at 0.000; hence, equal variances were not assumed. Thus a *post hoc* test using the *Games-Howell* method revealed greater ethnocentrism among respondents who are among the age group 36-40 than younger individuals among 20-30 years of age. As the significant relationship is established between the ethnocentric tendencies of just these two specific groups and not among the older people above 40 years of age hence, null hypothesis H2c is accepted.

Significant relation is established among the income group and OCET by performing ANOVA at a level of 0.000. The homogeneity of variance is not significant as the significance value is 0.544, and equal variances are assumed. Thus a *post hoc* test by *the TukeyHSD* method revealed greater ethnocentrism among respondents who are among the income group 6,00,000 – 24,00,000 than lower-income individuals among 50,000-4,50,000 income group. Hence, the null hypothesis H2d is rejected, and alternate is accepted. The results are depicted in Table 4.

Table 4. Analysis of Variance Tendency of OCET and Demographic Factors

Hypothesis	Demographic Variable	Sum of Squares	df	Mean Square	F	Sig.	Status
H2a	Education	6.809	4	1.702	2.072	0.083	Rejected
H2b	Gender	1.665	1	1.665	2.011	0.157	Rejected
H2c	Age	15.013	6	2.502	3.103	0.005	Accepted
H2d	Income	19.819	5	3.964	4.937	0.000	Accepted
H2e	Nature of dwelling	0.176	1	0.176	0.212	0.645	Rejected

Source: Research Findings (N=450)

7.3 Product Purchase Behaviour

Ethnocentrism is assumed to be an antecedent of the final product purchase behaviour and accuracy of the knowledge of brand ownership; however, the t-test of the computed mean of ethnocentric tendencies of the consumers (dependent variable) with products grouping variables indicate no significant relation with all the products except the soap. There exists a significant relationship between the ethnocentric tendencies and soap, which is significant at 0.005 levels. For all other products, ethnocentrism cannot be assumed to be an effective antecedent in interpreting the final purchase behaviour. There is also no significant relation among ethnocentric tendencies and brand ownership recall accuracy for all the selected products. The results of the analysis are depicted in Table 5.

We obtained narrow support for H3.

Table 5. Results of testing of Hypothesis 3

Criterion Variable	Product name	Frequency	Mean	t value	Results
Product Purchase behaviour	Shampoo	Indian 101 Foreign 310	Indian 3.26 Foreign 3.12	1.24	n.s.
	Oil	Indian 397 Foreign 21	Indian 3.17 Foreign 3.09	0.41	n.s.
	Colour	Indian 59 Foreign 78	Indian 3.26 Foreign 2.98	1.74	n.s.
	Soap	Indian 128 Foreign 315	Indian 3.35 Foreign 3.07	2.73	0.007*
	Cream	Indian 115 Foreign 258	Indian 3.24 Foreign 3.10	1.28	n.s.
	Face-wash	Indian 200 Foreign 133	Indian 3.09 Foreign 3.07	0.16	n.s.
Knowledge of Brand Ownership	Shampoo	Correct 230 Wrong 181	Correct 3.07 Wrong 3.17	-1.11	n.s.
	Oil	Correct 340 Wrong 78	Correct 3.14 Wrong 3.17	-0.21	n.s.
	Colour	Correct 77 Wrong 60	Correct 3.30 Wrong 3.09	1.27	n.s.
	Soap	Correct 225 Wrong 218	Correct 3.14 Wrong 3.17	-0.25	n.s.
	Cream	Correct 202 Wrong 171	Correct 3.12 Wrong 3.06	0.549	n.s.
	Face-wash	Correct 220 Wrong 113	Correct 3.05 Wrong 3.17	-1.24	n.s.

Source: Research Findings (N=450)
*n.s. Non-Significant * Significant*

There is no substantial statistical relationship between ethnocentrism and product purchase preference for individual products except soap. Regarding the interrelationship of behavioural outcome and the ethnocentricity of the consumers, our results demonstrated that ethnocentrism alone is not the true depicter of the consumers' product purchase preference. Four distinct results can be ascertained according to the descriptive interaction of the ethnocentricity and the selected six products' preferences.

1) Ethnocentricity of the consumers does not necessarily imply the final purchase of the domestic owned alternatives in case of all the six products, unlike the findings of Kumar et al. (2011)

2) However, non-ethnocentricity is also not a depicter of preferring foreign-owned alternatives. But the descriptive statistics reveal that they relatively prefer less Indian owned products than ethnocentric consumers.

3) Indian consumers prefer Indian owned traditional hair care products (i.e., Hair Oil). In India, using hair oil to massage the scalp is considered as an age-old tradition for healthy hair growth. And Indian hair oils are known for their purity and quality, therefore even if the consumers are ethnocentric or not, 95.2% and 94.8% of them both respectively prefer Indian owned oil.

4) Using foreign-owned products by ethnocentric consumers is highest (74.1%) in the case of shampoo and lowest in the case of face-wash (38.2%) except by hair oil. The results are depicted in Table 6.

7.4 Knowledge of Brand Ownership

Further research on the knowledge of brand ownership and ethnocentricity revealed considerable dissimilarities. Ethnocentric consumers are assumed to be aware of the actual knowledge of the products. Descriptive crosstab statistics reveal that apart from hair oil (80.6% correct), the awareness level of brand ownership for ethnocentric consumers is 52.80% for shampoo, 62.70% for hair colour, 52.30% for soap, 56.60% for cream and 64.4% for face-wash. Approximately a little less than half of the total ethnocentric consumers are not aware of the actual ownership of the products in the case of shampoo (47.20%) and soap (47.70%). The level of unawareness is least in the case of hair oil (19.40%). And for hair colour and face-wash, it is 37.30% and 35.6% respectively. The results are elaborated in Table 7.

Table 6. Product Preference based on Ethnocentricity

	Shampoo	Hair Oil	Colour	Soap	Cream	Face wash
Product Users	411	418	137	443	373	333
Ethnocentric	201 (48.9)	207 (49.5)	65 (47.4)	216 (48.8)	181 (48.5)	152 (45.6)
Non-Ethnocentric	210 (51.1)	211 (50.5)	72 (52.6)	227 (51.2)	192 (51.5)	181 (54.4)
Ethnocentric using Indian Owned products	52 (25.9)	197 (95.2)	33 (50.8)	74 (34.3)	60 (33.1)	94 (61.8)
Ethnocentric Using Foreign-Owned Products	149 (74.1)	10 (4.8)	32 (49.2)	142 (65.7)	121 (66.9)	58 (38.2)
Non-Ethnocentric using Indian owned Products	49 (23.3)	200 (94.8)	26 (36.1)	54 (23.8)	55 (28.6)	106 (58.6)
Non-Ethnocentric using Foreign owned Products	161 (76.7)	11 (5.2)	46 (63.9)	173 (76.2)	137 (71.4)	75 (41.4)

Source: Research Findings (N=450)
Values in parenthesis are in percentage

Table 7. Results of Cross Tabulation of Knowledge of Brand ownership and Ethnocentricity

		Shampoo	Hair Oil	Hair Colour	Soap	Cream	Face wash
Correct	Count	103	162	42	113	98	96
	% within Ethnocentricity	52.80%	80.60%	62.70%	52.30%	56.60%	64.4%
Wrong	Count	92	39	25	103	75	53
	% within Ethnocentricity	47.20%	19.40%	37.30%	47.70%	43.40%	35.6%
Total Ethnocentric		195	201	67	216	173	149

Source: Research Findings (N=450)

7.5 Relation with Previous Studies

Guo and Lin (2017) conducted a meta-analysis of eighty-seven articles and reviewed papers studying Indian ethnocentrism. The mean values of the country of manufacturing-based ethnocentric tendencies of Indian consumers on 7-point Likert scale were 3.88. The seven-point Likert scale is converted into 5 points Likert scale by the following formula

The mean value we need = (reported average score) *5/7 ……...Formula (1)

Thus, the mean ethnocentric tendencies for Indian consumers, according to previous research converted on 5 points Likert scale by formula (1), turns out to be 2.77. The mean value of the present study on 5 points Likert scale is 3.12. The mean CETSCALE value of the present study based on ownership perspective is much higher than previous studies examining the ethnocentric tendencies of Indian consumers.

8. Conclusion and Implications

Several theoretical contributions and practical implications can be drawn from this research. We conclude that research on ownership-based ethnocentrism sheds light on a new perspective of Indian consumer behaviour. Erstwhile studies have shown the impact of ethnocentrism on consumer behaviour, but this ownership-based ethnocentric study has proved that even if consumers are ethnocentric, they tend to exhibit incongruous behaviour.

8.1 Theoretical Contribution

This research concluded no relative association between the various demographic variables of gender, income and nature of dwelling, unlike the substantial relation established by previous researches of Mati (2013), Javalgi et al. (2005), Balabanis et al. (2004), Lee et al. (2003), Kaynak and Kara (2002), Watson et al. (2000), and Han (1990). However, the demographic variable age has a significant positive association with the ethnocentric tendencies of consumers. The consumers above 36-40 years are more ethnocentric than the rest of the respondents. The findings of researchers like Keillor et al. (2001) and Lee et al. (2003) concluded that lower-income group consumers demonstrate high ethnocentric tendencies, but in this research, higher-income group 600000/- and above are more ethnocentric than a lower-income group.

8.2 Practical Implications

In the era of a cross border competitive market, accurate knowledge of the effect of ownership based ethnocentric tendencies will pave the way for devising a fruitful marketing mix for Indian and foreign marketers.

The consumers are ethnocentric, but the lack of proper knowledge of the actual ownership of the brands leads to buying foreign-owned products by ethnocentric consumers. It is evident from the analysis stated in Table 8 (Appendix 1), where the actual ownership of the brands is restricted among users by shampoo (44%), hair oil (18.7%), hair colour (43.8%), soap (49.2%), cream (45.8%), face wash (33.9%). So,

1) It is imperative for the NGOs who are seeking to promote a domestic product to first enrich the knowledge of the consumers before promoting domestic products.

2) It is an eye-opener for the consumers who consider themselves to be ethnocentric to first update their knowledge database and think judicially before making a purchase decision.

3) Many people are ethnocentric and possess correct knowledge of the products and still end up buying foreign goods; in the context of these consumers, manufacturers should come forward with new innovative product features, better quality, better pricing, better distribution techniques to tap such consumers. Further research in this context is required to understand the psychology of such consumers.

4) Foreign marketers can give fair competition by disclosing their true ownership, or if they don't want fair competition can reap the benefits of the incorrect knowledge of Indian consumers.

8.3 Limitations of the Study

This study builds its premises on the research of Agarwal and Nandram (2020). It augments the concept and the relation of the new ownership based ethnocentric tendencies with a variety of perspectives like cosmopolitanism, brand ownership identification and knowledge of brand ownership; however, the respondents of the survey are more towards urban consumers, proportionate urban and rural respondents could have revealed the better knowledge of the ethnocentric tendencies. It examines the purchasing tendencies in the light of ethnocentrism; however, consumers' product preferences and knowledge of brand origin depend on the majority of other factors like consumer decision-making style etc., which is restricted as per subject to the scope of the paper. But the new perspective of consumer ethnocentrism study will pave the way for bringing sustainable development among all the nations.

Appendix 1

Table 8. Consumer Product Ownership Knowledge

	Hair Care			Skin Care		
	Shampoo	Hair Oil	Hair Colour	Soap	Cream	Face-wash
Actual product ownership is correctly perceived by consumers	56	81.3	56.2	50.8	54.2	66.1
Unaware consumers of the total using product	44	18.7	43.8	49.2	45.8	33.9

Source: Research Findings (N=450)
All the values are in percentages

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Momentum Effects: Evidence from the Indian Equity Market

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Abstract

The present study examines the momentum profitability and its sources in the Indian equity market while using the capital asset pricing model firstly and then the Fama-French three-factor pricing model. The empirical results reveal significant momentum profitability in the Indian equity market for short to medium-term holding periods such as 3 to 9 months. Further, empirical results indicate a significant difference between the profitability ratios of the winner and loser stocks in the Indian equity market. The present study documents that the Fama-French three-factor model is superior to the capital asset pricing model in explaining the momentum profitability in the Indian context.

Keywords: *momentum strategies, winner, loser, Indian equity market, capital asset pricing model, Fama-French three-factor model*

1. Introduction

The finance literature has documented many instances in favor of stock return predictability, which contradicts the efficient market hypothesis (EMH). This empirical evidence, known as market anomalies, challenges the concept of efficient market hypothesis along with asset pricing models. The academicians and practitioners have proposed investment strategies based mainly on two types of information: past accounting numbers and past return patterns. The latter information has gained much prominence to predict stock return in the finance literature. However, the efficient market school is still not convinced of past return patterns known as momentum effect into a future period and opposes the idea of stock return predictability based on past return.

On the contrary, the momentum investment strategy advocates buying the stocks (winners) that performed superior in the past and selling the stocks (losers) that performed inferior to the market. The equity markets worldwide, especially the developed markets like the USA, report the momentum effect in the stock returns. Jegadeesh and Titman (1993) observed a momentum anomaly in the USA equity market. Later, other parts of the world, such as European and Asian markets, also reported return continuation patterns. Further, many researchers made efforts to explain the momentum anomaly while exploring the sources of momentum profits. One set of studies focuses on the rational explanations of the superior performance of momentum investment strategies. Another one emphasizes the behavioural-based causes of the momentum effect.

However, both approaches have documented evidence to claim their superiority in explaining the momentum profitability. Still, the researchers need a decisive theory to root out the causes of this phenomenon. The present study is an effort to further understand the momentum effect in the Indian equity market and enriches the current literature. The study's primary objective is to examine the existence of momentum effect in the Indian equity market using the latest and robust data, using the Capital Asset Pricing Model and the Fama-French three-factor model. The analysis aimed to explain the momentum effects. An attempt is also made to trace the origins of momentum effects by evaluating the critical valuation ratios of sampled stocks. Many aspects make this study significant. Firstly, the literature on the momentum effect, particularly in the Indian context, lacks the studies attempting to explain the momentum returns using the simultaneous Capital Asset Pricing Model and the Fama-French Three-Factor Model. Secondly, while using asset pricing models, the study has also examined some fundamentals to root out the causes of momentum profits. Finally, a total sample of 398 listed firms – representing 14 principal indices of the National Stock Exchange of India Ltd. has been incorporated in the present study to examine momentum profitability in the Indian context. Another vital aspect is the period of study, which is from July 2005 to December 2019. This period witnessed different economic phases and embodied many important events such as resilience after the global financial crisis (2008–2009), changed political landscape (2014), and significant price shifts.

2. Review of Literature

The seminal work of DeBondt and Thaler (1985) furnished evidence of the past return effect in the current return patterns of securities. The study disseminated that the past winner and loser stocks were likely to follow the most extreme subsequent price reversal. Later Brown and Harlow (1988) named this anomaly as an "overreaction effect." Jegadeesh (1990), while exploring the predictability of individual stocks' monthly returns in the American stock market, reported that patterns were assessable from market inefficiencies. In addition, Jegadeesh and Titman (1993) reported the superior performance of momentum strategies in the American stock market while buying stocks with previous high returns and selling stocks with previous low returns. Chan et al. (1996) revealed that drifts in potential returns over the next six to twelve months are predictable from the previous return of a stock or last earnings news.
Similarly, Conrad and Kaul (1998) documented the profitability of return-based momentum trading strategy. The persistence of momentum effect in a developed market such as the US induced researchers and academicians to explore this anomaly's possible explanations. Jagadeesh and Titman (1993) suggested that the initial positive return was due to underreaction to the short-term information. The subsequent negative return was due to overreaction to the long-term information. Similarly, Barberis et al. (1998) reported investors' underreaction to information of prices and overreaction to their perception as a vital cause of momentum phenomenon in the US equity market. Daniel et al. (1998) documented that the momentum effects in the stock market persisted due to investors' self-attribution.

On the contrary, Conrad and Kaul (1998) and Fama and French (1996) suggested that high risk in size and value effect creates momentum profitability. Similarly, Chordia and Shivakumar (2002) linked macroeconomic variables to momentum profitability. Further, many studies offered various explanations of momentum effects such as size (Hong et al., 2000), trading volume (Hameed & Kusnadi, 2002), market conditions (Cooper et al., 2004), and credit

value of a stock (Avramov et al., 2007). Every market with its distinctive characteristics explains momentum profitability; still, it is worth investigating the origins of this phenomenon in financial literature, informed by signs of momentum in the American markets, the studies across the other parts of the world investigated this phenomenon and documented similar results. Rouwenhorst (1998) reported the medium-term impact of momentum investment strategies in European Equity Markets and suggested that the success of winner over loser cannot be attributed to the size and business risk.

Further, Rouwenhorst (1999) showed a strong size effect and momentum effect in emerging markets. Griffin et al. (2003) studied the momentum strategies on a large scale by covering forty markets worldwide. The study documented a mediocre momentum effect in Asian markets as compared to other markets.

Further, empirical evidence indicated that existing risk-based models are incapable of explaining the momentum profit. Similarly, Hameed and Kusnadi (2002) and Chui et al. (2003) reported weak momentum effects in the Asian markets compared to developed markets. Cakici et al. (2013) and Daniel and Markowitz (2016) observed high and important momentum returns in different asset classes under normal market conditions. Besides these, Mengoli (2004), Avramov et al. (2007), Fama and French (2012), and Asness et al. (2013) reported the momentum profitability in emerging equity markets. Overall, the above studies conducted in different markets with distinctive sample characteristics suggested superior investment performance momentum investment strategies based on past return continuation patterns; however, the magnitude of performance varied across the markets. Doan et al. (2016) explored the co-occurrence of momentum and contrast strategies in the Australian stock market from 1992 to 2011. The study reveals that contrarian strategies are priorly dominant in a short-term investment time frame, while momentum strategies dominate the long-term and intermediate periods.

Ejaz and Polak (2018) studied the momentum short-term portfolio return and return based on the risk-based CAPM model. It was seen that momentum short-term portfolio return was statistically significant, whereas CAPM risk-based model did not adequately explain the short-term profits. Choudhry and Wu (2015) found that the Chinese class A-share market behaves as momentum compared to class B's share market. The class B share market results were found dismal resulting from poor contributions of the liquidity and ownership factors. Gong (2016) examined that the intermediate-horizon momentum effect is more substantial in industries with higher competition. Chiao et al. (2020) compare price momentum and residual momentum strategies in four Asian markets, i.e., Taiwan, Thailand, Hong Kong, and Singapore. The results reveal that residual momentum strategies outperform price momentum strategies in all four Asian markets. Ahmad and Safdar (2018) found that price momentum reversals occur where fundamentals vary with past price performance, allowing us to develop an investment strategy that outperforms more than 80 percent of the time in the pure momentum strategy. Nedev and Bogdanova (2019) examined the momentum performance for more than 20 years and found that the performance of the equity securities was considered well in the past up to 12 months and in subsequent short-term periods. The results reveal more potent momentum effects on the US stock market than the Chinese stock market. DaDalt et al. (2019) analyzed that individual investor perform as momentum when they purchase Exchange Traded Funds, and they behave as a contrarian when buying common stocks. Chhimwal and Bapat (2021) analyzed the pattern of momentum and contrarian on foreign portfolio investors, domestic institutional investors, and retail investors from 2009 to 2018. It was observed that the first two investors were more pronounced momentum behaviour in service-oriented industries, but retail investors were more vital in past losing firms as a contrarian. Chen et al. (2021) verified the investor overreaction hypothesis in the real estate investment trust market, which explains that momentum is present in intermediate and is reversal effect in long term period.

In the Indian market context, Rastogi et al. (2009) examined the presence of momentum and overreaction phenomena and reported a strong overreaction effect in mid-cap stocks. On the contrary, Sehgal and Jain (2011) documented strong momentum returns in the Indian equity market. Similarly, Joshipura (2011) and Balakrishnan (2012) observed the profitability of momentum investment strategy for a short duration in the Indian market. Further, Ansari and Khan (2012) explained that substantial momentum profit was due to the excellent performance of the winning portfolio and the losers' poor performance. Dhankar and Maheswari (2014) reported economic and statistically significant short-term momentum and long-term contrarian effects in the Indian equities. Sehgal and Jain (2015) identified a high and statistically substantial price, revenue, and earnings momentum profit in the Indian equity market. Hanauer and Linhart (2015) analyzed equity prices in BRIC markets and reported economically significant but statistically less significant momentum returns. Balakrishnan (2016) reported substantial size, value, and momentum effects in

the Indian equity market, particularly small equities. Recently, Maheshwari and Dhankar (2017) documented robust momentum effects in the Indian equity market, subsequently controlling for size, value, and liquidity variables. Kaur and Bajwa (2017) analyzed the performance of stocks listed on the S&P BSE500 index based on monthly-adjusted prices applying contrarian and momentum strategies. The results revealed a strong momentum effect in the short term in the Indian stock market. Overall, the above literature documents the momentum effects in the Indian equity markets; however, this effect's magnitude is not commensurate with developed markets. Further, most studies are confined to the momentum effect investigation rather than explaining the momentum returns while using the asset pricing models. The present study examines and explains the momentum returns in the Indian equity markets with asset pricing models to fill this gap.

3. Data and Methodology

3.1 Sample and Study Period

The present study employed a sample of 398 listed companies on India Limited's National Stock Exchange (NSE). In this sample, those companies have at least a listing age of three years on NSE. The sampled firms are the constituents of leading indices of NSE viz. Nifty LargeMidcap250, Nifty Midcap100, Nifty Midcap150, Nifty Midcap50, Nifty MidSmallcap400, Nifty Smallcap100, Nifty Smallcap250, Nifty Smallcap50, Nifty100, Nifty200, Nifty50, Nifty500, and Nifty Next50. This sample contains 26 percent of the total listed companies on NSE and forms 88 percent of the total market cap of NSE. The Nifty50, a leading market index of the Indian equity market, is incorporated as a benchmark portfolio to represent the market. The fundamental and price data regarding benchmark portfolio and sample firms have been procured from the Capitaline database. The yield on the Indian government's 91-day treasury bills is integrated as a risk-free rate of return, and this information is collected from the database of the Indian economy section of the Reserve Bank of India's website (www.rbi.org.in). Overall, an effort has been made to use the sample data that rightly resembles the entire market. The study period of momentum investment strategies is from July 2005 to December 2019 in the Indian stock market. This period has witnessed two different ideological governments' regimes and the global financial crisis.

3.2 Methodology

The technique for evaluating return-based investment strategies was firstly introduced by DeBondt and Thaler (1985). Initially, it was a traditional method of event study analysis; further, Jegadeesh and Titman (1993) and Clare and Thomas (1995) advanced this methodology. This study follows these methodologies to examine the investment performance of momentum strategies in the Indian stock market from July 2005 to December 2019. It is an analysis of an incident that starts at time = 0 to test market efficiency. It is based on some announcements or events that influence the whole of the securities in the portfolio. It will then be examined if the excess portfolio return relative to the market portfolio is statistically significant ($t > 0$). The main objective of the present study is to examine whether the positive excess return behaviour after portfolio formation ($t > 0$) is similar to a pre-formation period ($t < 0$). Conditional on past excess returns, the winner and loser portfolios are created. The empirical study is focused on the excess return, which is measured as follows:

$$\mu_{it} = R_{it} - R_{mt}$$

Where;

R_{it} = Return on stock at period t.

R_m = Return on the market index at period t.

μ_i = Difference between return on stock I, and return on market at period t.

1. The monthly excess (market-adjusted) returns for each sample firm, i.e., μ, are computed from July 2005 to July 2020. Further, for each sample firm, the cumulative excess returns for the previous F months (F = portfolio-forming period, i.e., 3, 6, 9, 12 months) are computed and the individual stocks ranked from top to bottom based on these returns beginning in 2005. A winner portfolio is created by assigning equal weight to the top 20 percent of stocks. Similarly, an equally weighted loser portfolio is created from the bottom 20 percent of stocks. These two portfolios (H= portfolio holding duration, i.e., 3, 6, 9, 12 months) are retained for the following H months. The equally-weighted monthly abnormal returns were estimated over the next H months for both winner and loser portfolios. This process is repeated for every F-month formation period (all non-overlapping periods) from July 2005 to July 2019.
2. Three-month test periods (3 months formation (F) and three months evaluation (H)) produce 30 return series to analyze the difference between winner and loser portfolio results. Similarly, different formation period and holding period (F×H) alternatives such as 3×3, 3×6, 3×9, 3×12, 6×3, 6×6, 6×9, 6×12, 9×3, 9×6, 9×9, 9×12, 12×3, 12×6, 12×9, 12×12 produce 16 investment

strategies. Average returns for each holding period for the winner and loser portfolios are denoted $\bar{R}_w$ and $\bar{R}_L$, respectively.

3. The $\bar{R}_D$ difference is determined by subtracting R_L from R_w. A positive and statistically significant value for is an indication of momentum profitability, and it is estimated by regressing $\bar{R}_D$ against a constant:

$$\bar{R}_D = \bar{R}_L \ \bar{R}_w = \alpha_1 + \eta_t \quad (2)$$

Where

α_1 = is constant

η_t = is the error term

The regression model represented by Equation 2 is used for all 16 investment strategies. The t-test for the significance of the constant α_1 tells us whether there is a difference in the means of the winner and loser stocks. A significant and positive value for α can be seen as confirmation of momentum profitability in the Indian equity market: the winner stocks outperform the loser stocks in terms of the average performance.

4. The finance literature suggested the systematic risk difference as a possible cause of the differential returns between the winner and loser R_{Dt} stocks. To test that the monthly return differential between winner and losers has been regressed against the market risk premium in the following manner:

$$R_{Dt} = R_{ft} = \alpha_2 + \beta\,(R_{mt} - R_{ft}) + \varepsilon_t \quad (3)$$

Where

α_2 = Jensen's performance index,

β = difference between market beta of ,

R_m = return on the market,

R_f = return on risk-free asset,

ε_t = error term

The statistically significant positive value for α can be documented as an indicator of the momentum hypothesis acceptance. Moreover, the statistically significant positive value for β conveys that winner stocks represent higher systematic risk than the loser stocks.

5. The existing literature related to firm characteristics and stock returns submits two comprehensive inferences: firms with larger market capitalization produce less risk-adjusted returns than those with smaller market capitalization. This is known as the size effect (Banz, 1981) and firms with the higher price–earning (P/E) and higher price to book value (P/BV) ratios produce lower risk-adjusted returns than those with lower levels of those ratios; this is known as value effect (Fama & French, 1995). The investment performance of winners (losers) stocks may be an object of the size effect or value effect. In order to check it, the Fama-French three-factor model (FF3FM) is applied to the monthly return differential between winner and losers in the following manner:

$$R_{Dt} = R_{ft} = \alpha_i + \beta_i\ (R_{mt} - R_{ft}) + S_i\,(SMB) + Hi\,(HML)\,\varepsilon_t \quad (4)$$

The sample securities' size factor (SMB) is determined by the market capitalization of the sample securities, while the book measures the volume (HML) of the market ratio. At the beginning of July of each year from 2005 to 2019, the size portfolios are constructed by arranging the sample firms from top to bottom based on their market capitalization. Based on the median market capitalization for the lower 50 percent (small) and the top 50 percent, the sample is divided into two categories (big). This leads to developing two-size stock portfolios falling under each category, namely S and B, small and large.

Similarly, by arranging sample firms from top to bottom based on their BE/ME, the value portfolios are created at the beginning of July of each year t from 2005 to 2019. Then, three value portfolios are generated based on the breakpoints for the bottom 30 percent (low), the middle 40 percent (medium), and the top 30 percent (high) of the sample companies' BE/ME rated values. Thus, three stock value portfolios that come under each category, viz. small, medium, and high names, are obtained, respectively, as L, M, and H. Six portfolios are constructed from the intersection of two sizes, and three classes of BE/ME are called S/L, S/M, S/H, B/L, B/M, and B/H. The S/L portfolio includes small market capitalization stocks and low BE/ME firms, while the B/H portfolio represents big market capitalization companies with a high BE/ME ratio. Monthly value-weighted returns on the six portfolios are calculated for each month from July of year t till June of year t+1. The portfolios are reformed in July of year t+1 by using the same sorting method mentioned earlier.

4. Results and Discussions

Tables 1 and 2 presents the results regarding average cumulative abnormal return (ACAR) and summary statistics of Winner and Loser portfolios' monthly returns and arbitrage portfolio (Winner-Loser) for all sixteen investment strategies. In seminal literature, momentum strategies' superior investment performance is indicated by a positive return of the arbitrage portfolio, which is the difference between winner and loser portfolios' return. From Table 1, it can be observed that the momentum profit is 0.58 percent per month for the formation period of three months and holding period of three months (3 by 3), while for the

holding period of six months (3 by 6), this is 1.31 percent per month. If the holding period is increased to nine months (3 by 9), the momentum profits remain at 0.54 percent per month. On the other hand, the holding period of twelve months (3 by 12) yields 0.81 percent momentum profits per month. The risk measured in terms of the standard deviation of return on winner portfolios ranges from 8.1 percent to 8.9 percent for all four-holding periods during the same for loser portfolios range remain 9.8 percent to 11.77 percent. Overall, out of four investment strategies of three months' formation period, only holding period of six months' investment strategy (3 by 6) indicates statistically significant short-term momentum profits in the Indian equity market. The empirical results of all four investment strategies of six months' formation period indicate that the holding period of three months (6 by 3) yields statistically significant superior investment performance (1.49 percent per month) of momentum investment strategies. It is curious to know that with an increase in holding periods (6 by 6, 6 by 9, and 6 by 12), the positive momentum investment performance turned into negative performance. The empirical evidence also indicates the lower risk in winner portfolios as compared to loser portfolios. Overall, only one investment strategy- six months' formation and three months' holding period (6 by 3)- generates statistically significant superior momentum performance. In the case of nine months formation period, the results indicate insignificant moment effects. The difference between winner and loser portfolios

Table 1. The Return Summary Statistics of Winner and Loser portfolio for Three and Six-Month Formation Period

Panel: A								
Portfolio	**H 3 BY 3**				**H 3 BY 6**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0237	0.0079	0.0068	0.0829	0.0734	0.0191	0.0148	0.0812
Loser	0.0064	0.0021	-0.0039	0.0997	0.0059	0.0060	-0.0069	0.0988
Difference (W-L)	0.0173	0.0058	0.0048	0.0471	0.0676	0.0131	0.0142	0.0483
		t-Statistic	**P-Value**		**α**	**t-Statistic**	**P-Value**	
	0.0058	1.1720	0.2453		0.0113	2.6098	0.0106	
Portfolio	**H 3 BY 9**				**H 3 BY 12**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0608	0.0096	0.0153	0.0890	0.0909	0.0114	0.0153	0.0813
Loser	0.0113	0.0042	-0.0039	0.1177	0.0191	0.0033	0.0024	0.1129
Difference (W-L)	0.0495	0.0054	0.0169	0.0570	0.0718	0.0081	0.0170	0.0602
	α	**t-Statistic**	**P-Value**		**α**	**t-Statistic**	**P-Value**	
	0.0055	1.0546	0.2942		0.0060	1.1154	0.2672	
Panel: B								
Portfolio	**H 6 BY 3**				**H 6 BY 6**			
	ACAR	**Mean**	**Median**	**S D**		**Mean**	**Median**	**S D**
Winner	0.0504	0.0168	0.0184	0.0714	0.0157	0.0026	0.0041	0.0803
Loser	0.0056	0.0019	-0.0102	0.0900	0.0023	0.0004	-0.0169	0.1082
Difference (W-L)	0.0448	0.0149	0.0165	0.0529	0.0134	0.0022	0.0135	0.0639
	α	**t-Statistic**	**P-Value**		**α**	**t-Statistic**	**P-Value**	
	0.0149	2.1918	0.0337		0.0022	0.2740	0.7849	
Portfolio	**H 6 BY 9**				**H 6 BY 12**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0600	0.0067	0.0056	0.0731	0.0757	0.0067	0.0136	0.0759
Loser	0.0177	0.0020	-0.0119	0.1020	0.0992	0.0088	0.0042	0.1029
Difference (W-L)	0.0423	0.0047	0.0093	0.0598	-0.0235	-0.0021	0.0072	0.0632
	α	**t-Statistic**	**P-Value**		**α**	**t-Statistic**	**P-Value**	
	0.0047	0.6319	0.5293		-0.0021	-0.2807	0.7796	

Notes: This table reports the Summary statistics of return on Three and Six-Month Formation of the Portfolios

Table 2. The Return Summary Statistics of Winner and Loser Portfolio for Nine and Twelve-Month Formation Period

Panel: A								
Portfolio	**H 9 BY 3**				**H 9 BY 6**			
	ACAR	**Mean**	**Median**	**S D**		**Mean**	**Median**	**S D**
Winner	-0.0211	0.0010	0.0059	0.0743	0.0311	0.0052	0.0168	0.0813
Loser	-0.0317	-0.0003	-0.0227	0.1176	0.0000	0.0000	-0.0055	0.1152
Difference (W-L)	-0.0383	0.0013	0.0224	0.0796	0.0311	0.0052	0.0209	0.0726
		t-Statistic	**P-Value**		**A**	**t-Statistic**	**P-Value**	
	0.0013	0.0883	0.9302		0.0052	0.4683	0.6415	
Portfolio	**H 9 BY 9**				**H 9 BY 12**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0588	0.0065	0.0164	0.0824	-0.0062	-0.0005	-0.0009	0.0811
Loser	0.1469	0.0163	0.0213	0.1116	-0.0450	-0.0037	-0.0053	0.0953
Difference (W-L)	-0.0881	-0.0098	0.0052	0.0747	0.0388	0.0032	0.0134	0.0553
	α	**t-Statistic**	**P-Value**		**A**	**t-Statistic**	**P-Value**	
	-0.0098	-0.8949	0.3743		0.0032	0.4187	0.6767	
Panel: B								
Portfolio	**H 12 BY 3**				**H 12 BY 6**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0466	0.0155	0.0123	0.0712	0.0817	0.0136	0.0161	0.0777
Loser	0.0206	0.0069	0.0033	0.1004	0.0855	0.0142	0.0249	0.0954
Difference (W-L)	0.0260	0.0087	0.0179	0.0693	-0.0038	-0.0006	0.0144	0.0617
	α	**t-Statistic**	**P-Value**		**A**	**t-Statistic**	**P-Value**	
	0.0087	0.7094	0.4844		-0.0006	-0.0661	0.9477	
Portfolio	**H 12 BY 9**				**H 12 BY 12**			
	ACAR	**Mean**	**Median**	**S D**	**ACAR**	**Mean**	**Median**	**S D**
Winner	0.0570	0.0063	0.0111	0.0774	0.1739	0.0145	0.0036	0.0781
Loser	-0.0612	-0.0068	-0.0021	0.0759	0.1988	0.0166	0.0192	0.0980
Difference (W-L)	0.1182	0.0131	0.0125	0.0350	-0.0249	-0.0021	-0.0044	0.0573
	α	**t-Statistic**	**P-Value**		**A**	**t-Statistic**	**P-Value**	
	0.0131	2.6617	0.0103		-0.0021	-0.2691	0.7888	

Notes: This table reports the Summary statistics for Nine and Twelve-Month Formation of the Portfolios.

ranges from -0.98 percent to 0.52 percent per month during the whole study period. Further, it is interesting to note that the formation period of nine months and holding period of twelve months (9 by 12) investment strategy again generates negative momentum investment performance during the whole study period. In Panel D, the results of all four investment strategies of twelve months formation period are presented. It is worth noticing that the formation period of twelve months and holding nine months (12 by 9) generates a significant momentum profit of 1.31 % per month. However, the remaining three momentum investment strategies could not earn any statistically substantial profits. Again, the risk of winner and loser portfolios' returns is similar to the three, six, and nine-month formation period. Overall, the results indicate significant momentum profit in the Indian equity market for short to medium-term holding periods such as three to nine months in all four investment strategies. The present study documents significant momentum profits for 3 by 6 months, 6 by 3 months, and 12 by 9 months.

As compared to the international evidence on momentum investment performance, these results for the Indian equity market agree with the results of Chen et al. (2019), Barroso and Santa-Clara (2015), Cakici et al. (2013) and Jegadeesh and Titman (1993; 2001). Similarly, the empirical evidence of the present study is also in agreement with previous evidence on the Indian equity market such as Mohapatraa and Misra (2019), Maheshwari and Dhankar (2017), Ansari and Khan (2012), Sehgal and Balakrishnan (2002), Rastogi et al. (2009) and Ansari and Khan (2012). However, these studies report momentum profits only for a holding period of one to six months, whereas the present study documents the same for three to nine months' holding period. This superior

investment performance of momentum strategies in the Indian equity market originates from past winner stocks' return continuation patterns during three to twelve months span. Out of all (16) investment strategies, the majority (11) produces a positive average cumulative abnormal return (ACAR). On the other hand, the investment strategies (5), which yield negative ACAR, are based on medium to long-term formation periods, such as six to twelve months. Overall, the present study documents shortly to medium-term momentum profits in the Indian equity market, while there are patterns of return reversal in the long term.

4.1 Momentum Strategies and Stocks' Fundamentals

The present study documents the empirical evidence that indicates the superior performance of past winner stocks over the past loser stocks for short to medium-term holding periods in the Indian equity market. Numerous studies worldwide document that stocks' superior performance is associated with certain fundamentals such as size, value, leverage, and profitability. To determine the outstanding performance factors, an independent T-test has been performed to test the statistical significance of the difference between the fundamentals of winners and losers during the whole study period. The enterprise value and the market capitalization have been used as proxies for the size of the stocks. The leverage is measured by the total debt to equity ratio. The return on equity, return on capital employed, and return on assets are used to represent profitability. Further, the valuation ratios such as price to book value, price to earnings, and price to cash have also been compared. Out of the total sixteen investment strategies, four investment strategies from each formation period have randomly been chosen to examine the fundamentals of winners and loser stocks during the whole study period. Table 3 presents the average fundamental of winners and losers along with the t statistics. These results suggest the statistically significant difference between the profitability ratios of the winner and loser stocks for all four investment strategies. However, in the medium-term holding period (6 by 6), a significant difference has also

Table 3. The Results of Difference between Fundamentals of Winner and Loser Portfolio

	Basic EPS	PBDIT Margin	NPM	RNW/ Equity	ROCE	ROA	TD/ Equity	ERR	E V	M Cap.	EV/ EBITDA	P /BV	P/NOR	P/CASH	PE RATIO
t	3.59***	-1.42	-0.66	1.78*	3.71***	3.98***	-1.52	1.88*	0.07	0.95	0.67	0.95	-0.51	1.41	1.63
p	.0004	.1575	.5102	.0750	.0002	.0001	.1290	.0604	.9454	.3412	.5024	.3439	.6134	.1596	.1032
	6 × 6														
t	0.36	-0.54	-0.13	1.13	2.08**	2.95***	-0.65	1.59	-3.42***	-2.92***	1.06	-1.41	-0.50	-0.19	-0.37
p	.7174	.5887	.8967	.2600	.0383	.0033	.5144	.1124	.0007	.0036	.2898	.1590	.6172	.8468	.7115
	9 × 3														
t	2.17**	-1.08	-0.75	1.75*	2.27**	3.51***	-0.83	0.90	-3.70***	-3.05***	1.07	-2.13**	-1.27	3.60***	2.56**
p	.0299	.2844	.4544	.0804	.0237	.0005	.4060	.3690	.0002	.0024	.2835	.0339	.2048	.0003	.0107
	12 × 12														
t	1.69*	-1.49	-1.03	1.12	3.64***	2.17**	-0.95	1.80*	-0.14	0.07	1.01	-0.61	-1.11	0.49	0.07
p	.0910	.1393	.3063	.2641	.0003	.0304	.3417	.0722	.8858	.9474	.3147	.5404	.2689	.6271	.9464

Note: *This table documents the results of difference between fundamentals of winner and loser all momentum investment strategies. The table reports t-statistics and P-value for the fundamentals. ***, **, *Denote statistical significance at the 1, 5, and 10% levels respectively.*

Abbreviations: *EPS- Earning Per Share, PBDIT Margin- Profit Before Depreciation, Interest and Tax Margin, NPM- Net Profit Margin, RNW/Equity- Return on Net worth, ROCE- Return on Capital Employed, ROA- Return on assets, TD/Equity- Total Debt / Equity, ERR- Earning Retention Ratio, EV- Enterprise Value, M Cap.- Market Capitalization, EV/ EBITDA- Enterprise Value/ Earnings Before Interest, Tax, depreciation and amortization, P/BV- Price / Book Value, P/NOR- Price/ Net Operating Revenue, P/CASH- Price/ Cash Flow, PE Ratio- Price Earnings Ratio.*

been noted in the size of winners and losers besides the profitability. Further, the long-term formation period (9 by 3) strategy documents a significant difference between winner's and losers' valuation ratios besides other fundamentals during the whole study period. The empirical evidence negates the hypothesis there is a significant difference between the leverage of winner and loser stocks. Overall, the present study indicates the significant difference between the profitability of winner and loser stocks in the Indian equity market, which implies that profitability may be one of the significant factors explaining momentum strategies' superior investment performance in the Indian stock market.

4.2 Asset Pricing Models and Momentum Performance

Many studies by Zarowin (1990) and Clare and Thomas (1995) supported the notion that the systematic risk difference may cause differential returns between the winner and loser stocks. Further, some studies advocate that the stock market anomalies such as momentum profits may be compensated for the risk proxies measured by various asset pricing models. Therefore, it is imperative to examine the momentum investment performance in the Indian equity market regarding the capital asset pricing model (CAPM) and the Fama-French three-factor model (FF3FM).

The present section discusses the empirical evidence of the CAPM and FF3FM's regression model, with momentum returns and winner and losers' returns as the dependent variables. The results of the CAPM regression are presented in Table 4. The small values of adjusted R square (-.02 to .09) indicate CAPM's inability to explain the Indian equity market's momentum profits. The empirical results of short to medium-term superior investment performance of momentum strategies in terms of market-adjusted returns are further reinforced by statistically significant positive alpha (α) values in differential return as a dependent variable for 3 by 6, 6 by 3, and 12 by 9 investment strategies. The average differential risk-adjusted performance (average α) ranges from 0.34 to 0.77 percent for all sixteen investment strategies.

On the other hand, the average differential market risk (average β) ranges from 0.09 to 0.25 for all investment strategies, indicating a marginal difference in the risk of winner and loser portfolios. The results of the winner and losers' return as dependent variable documents none of the statistically significant alpha (α) values for all sixteen periods. However, the average alpha value (α) of all investment strategies in the case of winner stocks ranges from 0.52 to 0.96 percent, and in the case of loser stock, it goes from -0.23 to 0.47 percent. Further, except for the twelve months' formation period strategies, the difference in average beta (β) of winner and loser portfolios is not significant enough to deduce that the stocks carry a higher risk than loser stocks in the Indian equity market. Various studies such as Rouwenhorst (1998), Jegadeesh and Titman (2001), Sehgal and Tripathi (2005) and Ansari and Khan (2012) report similar results regarding the insignificant role of beta in explaining the momentum profits. Overall, the evidence suggests that CAPM cannot explain the momentum effect in the Indian equity market.

Tables 5 and 6 present the empirical results of the Fama-French three-factor model (FF3FM) for all sixteen momentum investment strategies. The results display the relatively large values of adjusted R square (0.11 to 0.54) compared to CAPM (-.02 to .09), indicating the FF3FM's superior performance in explaining the momentum profitability in the Indian context. The average differential risk-adjusted performance (average α) in terms of the FF3FM ranges from -0.47 to 1.09 percent for all sixteen investment strategies. The statistically significant positive alpha (α) values in the case of differential return as the dependent variable for 3 by 6, 3 by 12, and 12 by 9 investment strategies suggest superior risk-adjusted momentum profitability in the Indian equity market. Further, none of the market factor loadings is statistically significant in the case of the differential portfolio.

Similarly, all the SMB factor loadings are insignificant except one that points towards the absence of size effect in momentum profitability. On the contrary, all the HML factor loadings are statistically significant except one that indicates the value effect in the momentum returns in the Indian equity market. The average alpha value (α) of all investment strategies in the case of winner stocks is 0.068 percent, and in the case of loser stock, it is -0.258 percent. Further, the average market factor loading (β) of winner stocks (1.00) is marginally higher than the loser

Table 4. The Capital Asset Pricing Model Results of All Momentum Investment Strategies of the Portfolio

	WINNER – LOSER				WINNER				LOSER			
	3 × 3	3 × 6	3 × 9	3 × 12	3 × 3	3 × 6	3 × 9	3 × 12	3 × 3	3 × 6	3 × 9	3 × 12
α	0.0068	0.0113	0.0058	0.007	0.007	0.007	0.0026	0.0044	0.0004	-0.0043	-0.0031	-0.0023
t	1.4541	2.5996**	1.1659	1.4784	0.8228	0.9829	0.4241	0.7622	0.0369	-0.5106	-0.3406	-0.2593
β	-0.001	-0.0002	-0.0008	-0.0019	-0.6374	-0.7679	-0.7233	-0.7137	-0.522	-0.7306	-0.6292	-0.5142
t	-1.0055	-0.2506	-1.0145	-2.5716**	-4.7929***	-5.4178***	-6.6566***	-7.2635***	-2.3657	-3.2396	-3.4108	-3.3578
Adj. R^2	0.0092	-0.01	0.002	0.0418	0.2769	0.3093	0.3322	0.3548	0.1201	0.1954	0.1422	0.0934
	6 × 3	6 × 6	6 × 9	6 × 12	6 × 3	6 × 6	6 × 9	6 × 12	6 × 3	6 × 6	6 × 9	6 × 12
α	0.0140	0.0032	0.0060	-0.0004	0.0154	0.0033	0.0075	0.0082	0.0013	0.0003	0.0017	0.0088
t	1.9772**	0.4513	0.9386	-0.0565	1.3426	0.4106	1.1228	1.3599	0.1222	0.0243	0.1500	0.8556
β	0.0061	-0.0010	-0.0014	-0.0018	- 0.9265	-0.8022	-0.8172	-0.9278	-1.1002	-0.7016	-0.6739	-0.7379
t	1.1932	-0.5901	-0.8451	-1.4331	- 4.9113***	-7.2245***	-7.8022***	-9.7049***	-5.0646***	-2.6163**	-2.7402***	-3.4235***
Adj. R^2	0.0009	-0.0063	0.0042	0.0168	0.3864	0.3197	0.3448	0.4549	0.3385	0.1251	0.1117	0.1484
	9 × 3	9 × 6	9 × 9	9 × 12	9 × 3	9 × 6	9 × 9	9 × 12	9 × 3	9 × 6	9 × 9	9 × 12
α	0.0073	0.0075	-0.0071	0.0059	0.0119	0.0096	0.0102	-0.0001	0.0047	0.0023	0.0176	-0.0056
t	0.7367	0.8072	-0.7424	1.0346	1.4365	0.9962	1.3799	-0.0177	0.3065	0.1594	1.3736	-0.5546
β	-0.0024	-0.0016	-0.0021	-0.0031	-0.7249	-0.7888	-0.8937	-0.8889	-0.4662	-0.6199	-0.6634	-0.5632
t	-0.9601	-0.7234	-1.4415	-2.1872**	-5.0152***	-6.5763***	-7.6349***	-7.5557***	-1.2544	-1.9272*	-2.6313**	-2.2755**
Adj. R^2	0.00860	-0.0004	0.0158	0.0980	0.3506	0.3070	0.4061	0.3852	0.0302	0.0805	0.1101	0.1009
	12 × 3	12 × 6	12 × 9	12 × 12	12 × 3	12 × 6	12 × 9	12 × 12	12 × 3	12 × 6	12 × 9	12 × 12
α	0.0073	0.0006	0.0127	-0.0020	0.0185	0.0150	-0.0028	0.0077	0.0112	0.0052	-0.0153	0.0100
t	0.4999	0.0672	2.6641**	-0.2764	1.4804	1.6494	-0.3207	0.9021	0.5140	0.5490	-1.4780	0.8866
β	0.0015	-0.0016	-0.0021	-0.0021	-1.0433	-1.0223	-1.0788	-1.0581	-1.2070	0.1576	-0.8675	-0.8549
t	0.3600	-1.4841	-2.1296**	-1.7178*	-5.3673***	-5.8152***	-8.4590***	-10.3740***	-2.7765**	1.5230	-6.0700***	-5.4746***
Adj. R^2	-0.0298	-0.0095	0.0577	0.0167	0.4132	0.3928	0.3843	0.4521	0.2650	-0.0093	0.2507	0.1775

*Notes: This table documents the regression results of CAPM (Equation 3) for the all momentum investment strategies for the period 2005 to 2019. The table contains the intercepts, the coefficients for each factor, and the adjusted R^2. ***, **, *Denote statistical significance at the 1, 5, and 10% levels, respectively*

Table 5. Results of The Fama- French Three Factor Model for Three and Six-Month Formation Period of the Momentum Investment Strategies

	WINNER - LOSER				WINNER				LOSER			
	3 × 3	3 × 6	3 × 9	3 × 12	3 × 3	3 × 6	3 × 9	3 × 12	3 × 3	3 × 6	3 × 9	3 × 12
α	0.0051	0.0075	0.0039	0.0068	-0.0007	0.0038	-0.0012	0.0012	-0.0056	-0.0037	-0.0051	-0.0055
t	1.1169	1.9166*	0.9126	1.7958*	-0.0834	0.6860	-0.2205	0.2161	-0.6441	-0.5801	-0.7623	-0.8062
β	-0.0007	-0.0001	-0.0004	-0.0008	-0.7675	-0.9684	-0.8424	-0.8254	-0.6817	-0.9446	-0.7934	-0.7432
t	-0.9290	-0.1364	-0.6366	-1.3700	-7.6827***	-6.5993***	-8.8316***	-9.1658***	-4.4363***	-4.3072***	-5.1531***	-5.8429***
SMB	0.0661	0.2162	-0.0378	-0.3960	0.7895	0.8789	0.7416	0.6070	0.7169	0.6580	0.7772	1.0019
t	0.2979	1.2171	-0.2908	-2.5285**	3.9814***	4.6039***	4.8215***	3.8674***	2.5815**	2.4950**	4.2998***	5.5511***
HML	0.2652**	0.2514**	0.3689***	0.3861***	-0.3624	-0.3252	-0.3304	-0.2264	-0.6272	-0.5765	-0.6993	-0.6123
t	2.5410	2.4265	3.8699	5.3621	-2.7149***	-3.5877***	-3.5608***	-2.6830***	-3.4966***	-5.3032***	-5.8593***	-5.4356***
Adj. R^2	0.1410	0.1162	0.3108	0.5417	0.5538	0.5821	0.5923	0.5339	0.4824	0.5160	0.5709	0.5704
	6 × 3	6 × 6	6 × 9	6 × 12	6 × 3	6 × 6	6 × 9	6 × 12	6 × 3	6 × 6	6 × 9	6 × 12
α	0.0109	-0.0003	0.0036	-0.0002	0.0096	-0.0019	0.0019	0.0011	-0.0015	-0.0014	-0.0015	0.0015
t	1.3269	-0.0439	0.6702	-0.0393	1.2752	-0.3396	0.3215	0.1926	-0.1853	-0.1727	-0.1864	0.2094
β	0.0014	-0.0006	-0.0010	-0.0011	-1.1870	-0.9458	-0.9233	-1.0350	-1.3390	-0.8880	-0.8255	-0.9228
t	0.7829	-0.4249	-0.7337	-1.0125	-6.3512***	-8.0653***	-8.9954***	-9.9560***	-10.9214***	-3.5915***	-3.8178***	-4.6350***
SMB	0.2330	0.2021	-0.1900	-0.1207	0.9408	0.9996	0.8993	0.8495	0.7130	0.7986	1.0883	0.9700
t	0.7082	0.6622	-0.9334	-0.5291	3.0791***	5.1608***	4.2979***	3.8703***	2.1965**	2.8641***	4.9228***	4.9097***
HML	0.3085	0.4546***	0.3976***	0.5261***	-0.2058	-0.2104	-0.1229	-0.1186	-0.5135	-0.6651	-0.5207	-0.6446
t	1.6561	3.7004	4.1245	5.4980	-1.8873**	-1.9740**	-1.2345	-1.5225	-4.1066***	-5.7752***	-3.3650***	-5.6520***
Adj. R^2	0.1490	0.2544	0.3499	0.4440	0.6701	0.6102	0.5781	0.6223	0.7283	0.5688	0.5531	0.5873

*Note: This table documents the regression results of Fama-French three factor model (Equation 4) for the three and six-month formation period momentum investment strategies for the period 2005 to 2019. The table contains the intercepts, the coefficients for each factor, and the adjusted R^2. ***, **, *Denote statistical significance at the 1, 5, and 10% levels, respectively.*

Table 6. Results of The Fama- French Three Factor Model for Nine and Twelve-Month Formation Period of the Momentum Investment Strategies.

					WINNER				LOSER			
	9 × 3	**9 × 6**	**9 × 9**	**9 × 12**	**9 × 3**	**9 × 6**	**9 × 9**	**9 × 12**	**9 × 3**	**9 × 6**	**9 × 9**	**9 × 12**
A	0.0064	0.0031	-0.0047	0.0015	-0.0044	-0.0007	-0.0045	-0.0003	-0.0105	-0.0036	0.0005	-0.0015
T	0.6330	0.4894	-0.7078	0.2681	-0.6828	-0.0841	-0.4631	-0.0383	-0.8464	-0.3833	0.0575	-0.1525
B	-0.0016	-0.0014	-0.0015	-0.0025	-0.8140	-0.9020	-0.9783	-1.0141	-0.6469	-0.7517	-0.8215	-0.7532
T	-0.7668	-0.8465	-1.1795	-2.2270**	-6.0320***	-8.2929***	-7.8682***	-8.2343***	-1.9976**	-2.7499***	-3.5470***	-3.8237***
SMB	-0.0423	-0.0363	-0.0457	-0.3352	1.1060	1.1866	0.9217	0.9666	1.1382	1.2178	0.9640	1.2949
T	-0.0711	-0.1164	-0.1699	-0.9394	4.1064***	4.0631***	3.0866***	2.9713***	1.9569**	4.6662***	3.4399***	4.1590***
HML	0.4288**	0.4869***	0.6337***	0.2621***	-0.0409	-0.0434	-0.1087	-0.1673	-0.4716	-0.5314	-0.7422	-0.4296
T	2.4987	4.1149	3.9936	2.4670	-0.3533	-0.4398	-0.7904	-1.3981	-2.7719***	-3.0709***	-4.8900***	-2.4343**
Adj. R^2	0.17750	0.33740	0.4093	0.2784	0.6278	0.5963	0.5736	0.5603	0.3854	0.5591	0.5691	0.4593
	12 × 3	**12 × 6**	**12 × 9**	**12 × 12**	**12 × 3**	**12 × 6**	**12 × 9**	**12 × 12**	**12 × 3**	**12 × 6**	**12 × 9**	**12 × 12**
A	0.0010	0.0020	0.0074	0.0019	0.0132	0.0007	-0.0036	-0.0032	0.0120	0.0037	-0.0109	-0.0050
T	0.0757	0.2992	1.9383**	0.2157	0.9374	0.0637	-0.4813	-0.3933	0.9181	0.5520	-1.5730	-0.6449
B	0.0020	-0.0003	-0.0023	-0.0014	-1.2221	-1.2043	-1.2574	-1.2521	-1.4290	0.0294	-1.0287	-1.1136
T	0.7716	-0.1965	-2.4995**	-1.1088	-4.1789***	-8.2298***	-8.5733***	-9.7260***	-7.3872***	0.1857	-8.5689***	-7.9528***
SMB	-0.3581	0.0018	0.0183	-0.2125	0.7832	0.8344	1.0234	0.7409	1.1456	-0.0025	1.0092	0.9566
T	-0.6456	0.0055	0.0710	-0.5443	1.2727	2.6247**	3.1535***	3.0072***	3.9149***	-0.0075	4.9722***	3.3653***
HML	0.4007	0.5640	0.2427	0.4188	-0.0440	-0.1483	-0.1230	-0.2238	-0.4429	-0.5654	-0.3647	-0.6421
T	2.5531**	3.0011***	4.5667***	2.6978***	-0.3692	-1.1237	-1.0244	-2.7506***	-2.6956**	-2.9847***	-2.8973***	-6.0267***
Adj. R^2	0.3692	0.4246	0.2246	0.4496	0.5017	0.5556	0.5583	0.6602	0.7138	0.4263	0.5949	0.7376

Note: This table documents the regression results of Fama-French three factor model (Equation 4) for the nine and twelve-month formation period momentum investment strategies for the period 2005 to 2019. The table contains the intercepts, the coefficients for each factor, and the adjusted R^2.
****, **, *Denote statistical significance at the 1, 5, and 10% levels, respectively*

stocks (0.85) for all investment strategies. Similarly, the average SMB loading of winner stocks (0.89) is almost equal to loser stocks (0.90), indicating identical risk reflected by the size factor in winner and loser stocks. It is curious to note that the average HML loading in the case of winner stocks (-0.175) is significantly higher than the loser stocks (-0.565), indicating a robust value effect in momentum investment performance in the Indian stock market.

Overall, the empirical results suggest that the Fama-French three-factor model is superior to the capital asset pricing model in explaining the momentum profitability in the Indian context. The results also point towards a significant value effect in the momentum investment performance while the size effect is absent from the momentum returns. Further, winner and loser stocks almost carry identical systematic risk measured by market proxy.

4.3 Implications of Results

The present study documents a short to medium-term momentum profitability in the Indian equity market during the study period. These continual return patterns are appropriate to exploit by short-term retail investors and foreign institutional investors who always look out for these opportunities. Further, the results also indicate a significant difference between the winner and loser stocks' profitability ratios, which is vital for fundamental investors/ managers to profit in the market. The Fama-French three-factor model suggests robust evidence of value effect in the superior momentum investment performance, and this can be viewed as an anomaly in the Indian equity market, posing a question on its weak form efficiency and a cause of concern for regulators.

5. Conclusions

The present study's primary objective is to examine the performance of momentum investment strategy in the Indian equity market while following the 16 investment strategies based on the short to medium-term formation and holding period. The present study also examines the sources of momentum profitability in the Indian equity market while using the capital asset pricing model and the Fama-French three-factor pricing model. The empirical results reveal significant momentum profitability in the Indian equity market for short to medium-term holding periods such as 3 to 9 months. This superior investment performance of momentum strategies in the Indian market originates from past winner stocks' return continuation patterns during three to twelve months. These results align with the international as well as Indian studies on momentum investment

performance. However, these studies report momentum profits only for a holding period of one to six months, whereas the present study documents the same for three to nine months.

Further, empirical results indicate a significant difference between the profitability ratios of the winner and loser stocks in the Indian equity market. The empirical evidence reveals the inability of the capital's accordance with and model in explaining the superior investment performance; the momentum investment strategies in the Indian equity market. On the contrary, the present study documents that the Fama-French three-factor model is superior to the capital asset pricing model in explaining the momentum profitability in the Indian context. The results also point towards a significant value effect in the momentum investment performance while the size effect is absent from the momentum returns. Further, winner and loser stocks almost carry identical systematic risk measured by market proxy. Overall, the present study documents the strong short-term momentum profitability in the Indian equity market, which manifests value-effect as suggested by the Fama French three Factor Model. This evidence shows how robust the implication for retail investors, fund managers, and foreign institutional investors as all the participants in the market can improve their investment strategies based on these shreds of evidence.

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Ranking E-retailers through SEO Tools using PROMETHEE Approach

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Abstract

Applying Search Engine Optimization (SEO) tools such as Google Trends, Similarweb, Semrush, Ubersuggest, and GTmetrix, this research relatively evaluates e-retailing websites' top five fashion retailers in India. There is a dearth of literature available on evaluating Indian fashion e-retailers; however certain Indian studies speak about other issues like the application of WEBQUAL, there is no research available on comparing and ranking fashion e-retailer websites in the Indian context. The criteria for selecting these websites are the popularity and sales of these e-retailers. SEO tool ranked the websites individually, and then the final ranking was given to all five-fashion e-retailers. Further PROMETHEE (Multi-Criteria Decision Making) technique was used to validate the ranking suggested by SEO tools. The result shows that Myntra is ranked first, followed by Ajio and Nykaa Fashion at second and third rank respectively.

Keywords: *Fashion, e-retailers, online retailers, SEO, SEO tools, PROMETHEE*

1. Introduction

In this era of the digital revolution, every sector, be it services, FMCG, automobile, and retail, is revamping its traditional business model. Due to Covid-19, online shopping has become a necessity more than a trend (Kulkarni & Bagre, 2020; Rungsrisawat et al., 2019). The retail landscape is now internet-driven. Earlier, the customers had to visit brick and mortar retail stores to purchase the products. New age consumers are convenience-driven, and they scout for retailers who provide a seamless online shopping experience (Wang et al., 2020). E-commerce companies that enable companies and e-retailers to provide value-added products to the customers process the information stored as part of analytics. A study conducted by Outbrain (2021) revealed that search is the number one driver of traffic to content sites, which has surpassed and beaten social media by more than 300%. Measurement of SEO is important because it helps generate sales, conversions, better ROI, and helps in demonstrating the value.

Due to stiff competition amongst online fashion retailers, there is a need to study the ranking of sites and how the retail websites outshine and appear on the first page of SERP (Search Engine Result Page) (Karmaker et al., 2017). The sites obtain highly qualified leads organically through effective keyword research, site architecture, on-page, technical, and local SEO. SEO is gaining a lot of importance due to digital disruptions. Past studies conducted in this area have majorly focussed on KPI (Key Performance Indicators) metrics for the success of websites such as organic traffic, keyword ranking, lead/conversions, bounce rates, pages/session, average session duration, page load time, top exit pages, and crawl errors. These nine elements enable search engine spiders to rank the website based on the relevance of the content. Other authors suggested that SEO should be done holistically with other elements like social media marketing, influencer marketing, SEM (Search Engine Marketing), etc. SEO is the topmost digital marketing trend in 2021 and is crucial in this new normal (Sharma & Mittal, 2020). A plethora of literature is available concerning SEO in various sectors (Lopezosa et al., 2021; Žilinčan, 2018). However, there is a dearth of existing literature in the area of retail website optimization. Yadav et al. (2013) conducted a study in which the author revealed the search engine that is mostly used by the customers and the influence of social media marketing and search engine optimization on customers' perception and purchase behaviour. However, the author had used only a few metrics and analyzed only Alexa data. The ranking of SEO is imperative for websites. Crawling, indexing and ranking are important constituents of the website because they help increase online communication with the users (Bagawade et al., 2020). However, the existing literature lacks an explanation of the need to rank a website on its functional effectiveness and why it should be a marketing agenda for the firm.

Website ranking has gained prime importance. Due to this, there is a requirement of making websites visible in the top-priority search results to ensure visibility and attract an audience to visit the website (Verma et al., 2020). Apart from this, ranking is essential because when the website's SEO score is good, the website is viewed as credible in the minds of potential consumers. Furthermore, SEO ranking is important to generate clients through user experience, easy navigation, etc. Thus, ranking plays an important role because it mentions what the product stands for and other relevant details. Google ranks the site on the top positions of the SERP (Search Engine Result Page) because of its user experience.

To overcome this gap about the usage of a few metrics and tools, our study aims to analyze numerous metrics like bounce rates, domain score, authority score, average visit duration, backlinks, and other important metrics, which are relevant to critically and holistically measure the effectiveness of E-retailing websites, using a variety of SEO tools. Using the top five online retailing websites- Myntra, Ajio, Max Fashion, Nykaa, Tatacliq and Koovs fill the gap in the previous study.

The study is organized to mention the research gap in section one, followed by relevant literature in section two, which highlights the importance of SEO and why website ranking is important. Further in section three, a robust methodology is given about using various metrics for ranking websites; these rankings are then validated by the PROMETHEE approach, an MCDM technique to outrank the comparison units. In this case, it is the top five online retailers in India. Sections four and five mention the results and discussion. In the final section, the conclusion of the study and managerial implications are mentioned.

2. Literature Review

Companies and websites are engaged in the rat race in today's scenario. Each website is trying to outshine others to emerge as the top-ranked website in the Search Engine Optimization battlefield. One question arises: "What is SEO?" There is a trove of definitions given by more than 60 experts. The precise meaning of the term SEO is – the process of optimizing the website as well as the content of the website so that it will show on the top positions on the search engine result space (Umair et al., 2018; Goodwin, 2018). According to Google's Search Engine Optimization,

SEO is a series of modifications and techniques, making it easier for search engines to crawl, index, and understand a website's content. SEO is divided into two groups: on-page SEO and off-page SEO. The right combination of both can bring a significant increase in traffic thanks to a higher position in SERP (Zilincan, 2015).

The SEO strategy for any business is necessary for its success. Simply, paying for the PPC (pay per click) campaigns and employing search engine marketing will not fetch a large number of leads. The website's prominence is justified by your approach towards continuous improvement (Özkan et al., 2020). Google as a search engine prioritizes the quality of content and the benefits provided through the websites. The importance SEO holds is to index and rank on the top positions, give the website owners a warning signal of updating content as per the algorithm, and it helps in ensuring credibility and generates organic leads (Faraj et al., 2018). Search engines change their algorithm frequently, and the factors could be more than 200. Therefore, it is tedious to consider all the factors as they might change. The lucrative content, the clear description, and the website, which is easy to comprehend, are major factors. Twenty-four website characteristics came up as factors affecting any website's ranking, with the most references mentioning quality and quantity of backlinks, social media support, keyword in the title tag, website structure, website size, loading time, domain age, and keyword density (Ziakis et al., 2019). Many website owners try to play smart by building excessive backlinks to unauthorized sources to bring more visits. However, they do not know that their doomsday is nearing them, as the Google algorithms will catch them red-handed. Therefore, the websites should meet SEO criteria. SEO usage facilitates inbound marketing. About 59% of marketers stated that inbound practices had garnered the highest quality leads (HubSpot, 2020). It saves some costs when you adopt a mixture of SEO and SEM. The role of SEO is to work together with public relations as both increase brand awareness (Cruz & Karatzas, 2020).

Search Engine Optimization is a popular tool to derive insights about websites' ranking and organic performance. Earlier, the companies developed the perception that SEO and organic reach are not that essential, and often it was perceived that SEO was dead. However, the overwhelming study revealed that SEO is alive, and it got the ultimate charm. The new statistics on SEO will give an alarming signal to the companies and MSMEs (Medium Small and Micro Enterprises) to incorporate SEO to improve site rankings. Fashion brands are also incorporating SEO into practice. The research on the importance of loyalty of fashion brands through digital marketing highlights the fact that SEO tools are used by fashion brands to detect sales opportunities, analyze data based on keywords used by the web users, and carry out web positioning strategies (Muniesa et al., 2020).

SEO effectiveness is measured through the application of different tools available. Merely keyword rankings and their measurement are not enough. Every business, be it local, national, or international, all are concerned about measuring the results and taking corrective actions. They need to dive into further analysis and details. The tools like Semrush, Ubersuggest, Moz, SEO Analyzer, Google Analytics come to the rescue (Vyas, 2019). These tools are commonly used (Setiawan, 2020). Semrush is one of the best tools; it has more than 45 reports and around 6000000 users. It helps businesses like top rank marketing and sites like Ebay.com successfully use the data and insights obtained from Semrush to improve SEO strategies. They made digital marketing campaigns, social media management and content very meaningful and efficient. The companies use the tools to analyze the bulk traffic analysis, to know the organic research to analyze, which keywords were there, are branded keywords more used than non-branded keywords. The traffic analytics reveals the percentage of online and paid traffic, the domain and authority scores are compared with the competitors to know what they are using, the site audit and page views, average visits, bounce rates, etc., are analyzed, and conclusions are drawn for further actions. Thus, in this way, the SEO is measured.

SEO is vital to increase the websites' ranking and helps in enhancing the prominence of the business operating online (Lui & Au, 2020). Numerous studies have been conducted in the area of Search Engine Optimization, and some existing literature reviews are published about the applications of Search Engine Optimization across different industries. Studies conducted to rank websites were primarily done in the area of Healthcare, Education, Tourism (Ciolac, 2011; Bilsel et al., 2006; Ozkan et al., 2020). One such area explored is the LIS links. The study intends to find the results of using web analytics in SEO for the domain of LIS links in India. The study by Setaiwan et al. (2020) used the Ubersuggest tool to derive meaningful results and interpretations. The study revealed the five most important metrics: bounce rates, overall traffic, new and returning guests, mobile and desktop visits, and sources of traffic.

Yadav et al. (2020) depicted the impact of social media marketing and search engine optimization on the consumer behaviour of retail sector customers. The results of the study showed that retail customers favour SEO because of the trust

and the relevance of the products listed on SERP, the quality of reviews, feedback, and client assistance. The customer read the reviews and ratings of 4-5 stars. Implementing the mix of both SMM (Social Media Marketing) and SEO will bring positive results as the social media channels influence retail consumers and the SEO provides trust and credibility, so their perception changes with the results as both the strategies change retail customers' perception and the buying behaviour (Saura et al., 2020).

SEO techniques are used to maximize traffic on websites by optimizing content. Hypertext Initiated Topic Search can be used for the question-based hunt and page rank calculations, which gives more weightage and significance aids in the association among different pages and sites (Bourina & Dunaeva, 2021). Eighty per cent of the search traffic comes from a combination of features like content, and product optimization and most of the users recognize the websites due to their presence on the first page of any search engine (Sankpal & Patil, 2020).

In a study conducted by Vyas (2019), tourism websites owned by the government and state-run websites were evaluated by comparing them with private owned websites. SEO tools like Semrush, Similarweb, Moz, Alexa, Twitter Search, Google Trends, and SEO Analyzer were used to evaluate the performance. These SEO tools place weightage on the various dimensions that affect website performance, like bounce rate, lap duration, backlinks, traffic (Shayegan & Kouhzadi, 2020; Vyas, 2019). Suksida et al. (2017), while comparing world university rankings, used various popular tools like Semrush and Alexa. However, the application of these SEO tools may not be the fool-proof method to assess the ranking as each tool uses varied parameters to evaluate a website. Furthermore, these tools are not perfectly reliable because of their nature, as most of these are freely available on the web and are not governed by any authoritative body.

The applications of SEO in Internet marketing strategy critically analyzed the use of SEO and SEM, Web 2.0 strategies, and banner ads in internet marketing (Chen et al., 2011). Marketers always try to devise strategies to improve the ranking and brand positioning of the websites. In a constant effort to rank the website high on SERP, marketers use both ethical and unethical SEO practices. SEO and PPC-based campaigns involve costs, and ranking may stay constant. On the other hand, risk related to invalid clicks, time, ranking uncertainty, and diversionary is constant.

In such a complex environment with varied factors on the SEO, it is tremendously hard for some web managers to categorize the start point and initiate the SEO execution to make the brand visible on popular search engines (Ghandour, 2018). The literature identified a gap as there are very few studies conducted in the area of SEO implementation for ranking websites for online retailers (Singh et al., 2017). Also, all the studies conducted in other sectors are merely conducted using free SEO tools, but none focused on rank validation.

3. Research Motivation

Indian e-retail space is becoming extremely competitive due to the presence of many small and big e-commerce companies, especially in the area of fashion retail. The authors drew motivation for the study after identifying the dearth in literature for ranking and evaluating these fashion retailers. To provide the solution to these issues, this research aims to establish decision models of carrying out SEO-based ranking for digital marketers and website administrators to advance the performances of websites for better customer satisfaction. The study aims to identify various important parameters and are used to rank a website using SEO tools. The authors used PROMETHEE (MCDM) approach, which is a novel and objective approach for ranking, to validate these rankings.

4. Research Methodology

The top six E-retailing websites, namely- Myntra, Max Fashion, Ajio, Nykaa Fashion, Tatacliq and Koovs, which are amongst the top companies in India, were the unit of analysis and comparison. These websites were selected based on how optimized these sites are, as displayed in Table 1. The tools that were employed are Semrush, GTmetrix, Similarweb, and Ubersuggest. These tools were used to analyze the six e-retailing websites. Each tool gives an important insight into SEO effectiveness. For example, a similar web is a powerful tool to analyze the website's traffic analysis to optimize the performance of the websites. Using Similarweb, we have evaluated metrics like total visits, engagement, traffic from social media, and display ads. Semrush, a well-known tool for improvising SEO campaigns, gave us insights about authority score, paid and organic search traffic, bounce rate, average visit duration, backlinks, and traffic cost. We also have leveraged tools like Ubersuggest and GTmetrix. Using Ubersuggest, we gauged and analyzed several metrics like on-page SEO score, website loading time, backlinks, monthly organic traffic, organic keywords, the core web vitals like LCP- largest content element, CLS- cumulative layout shift and TBT- total blocking time and thus the overall grade is determined using GTmetrics. These metrics will enable e-retailing websites to reorient their SEO and content strategy and boost efficiency.

The data was gathered from Similarweb in December 2020, and the top website visit was later filtered. The type of research being employed is secondary research, which

implies that different tools were used to gather insights. The data comprised of different metrics evaluated by different tools. We have evaluated key performance metrics to measure the SEO effectiveness of six e-retailing websites through four popular tools: Semrush, Ubersuggest, GTmetrix, and Similarweb. Out of these tools, Similarweb is used to analyze the website traffic and performance through competitive intelligence, Semrush is used to analyze the domain overview, organic and paid traffic, backlinks, organic research, bounce rates, and average visits duration. GTmetrix is used to gather insights about the page speed of the website. The performance score is evaluated based on three key parameters: loading performance (55%), interactivity (40%), visual stability (5%), which are the core web vitals. The score is measured and compared by the threshold limit of 2 seconds that is recommended for e-commerce websites. Ubersuggest tool is used to derive insights about the on-page SEO score, website loading time for both desktop and mobile, organic monthly traffic, organic keywords, and backlinks. The highest score is 100, and the scores range from 1-100; the higher the score, the higher is the website ranking. Individual websites were evaluated based on these scores obtained by the tools used, and further analysis was conducted.

Table 1. Top websites as per visits

Domain	Total visits (in millions)
myntra.com	45
ajio.com	23.8
nykaafashion.com	4.3
maxfashion.com	0.16
tatacliq.com	29.03
koovs.com	0.92

The output tables and indicators are shown below:

Table 2. Semrush Ranking

Semrush Data							
		Search Traffic					
SEO Elements	Authority Score	Organic	Paid	Bounce Rate	Avg. Visit Duration	Backlinks	Traffic Cost
Myntra.com	64	43.9m	373.8k	31.58%	14:45	2.2m	79.1k
Ajio.com	61	8.1m	143.2k	41.82%	10:48	622.6k	12.4k
Tatacliq.com	62	3.4m	103k	58.05%	09:36	493.4k	7.9k
Koovs.com	58	439.8k	8.2k	59.97%	01:23	110.9k	1.1k
Max fashion	40	1.1m	119.5k	39.27%	10:06	54.2k	5.6k
Nykaa Fashion	42	4.1m	10.2k	47.81%	07:19	294.4k	18.6k

Table 3. Ubersuggest Ranking

UberSuggest						
Website	On-Page SEO Score	Website loading time in Sec.		Monthly Organic Traffic	Organic keywords	Backlinks
		Desktop	Mobile			
Myntra.com	63	2	6	16632320	3306536	736944
Ajio.com	68	3	30	14626731	1100054	81200
Tatacliq.com	50	3	6	2341490	1222505	288346
Koovs.com	81	2	7	338113	169177	60397
Max fashion	45	1	7	1427685	277593	113175

Table 4. GTmetrix Ranking

Website	GTmetrix			Web Vitals		
	Grade	Performance	Structure	LCP	TBT	CLS
Myntra.com	C	69%	88%	1.8 s	0.5 s	0.11
Ajio.com	F	24%	69%	3.0 s	1.2 s	0.31
Tatacliq.com	F	16%	75%	7.2 s	4.7 s	0.63
Koovs.com	F	17%	77%	2.8 s	1.7 s	0.59
Max fashion	D	52%	81%	1.8 s	0.8 s	0
Nykaa Fashion	E	37%	85%	3.4 s	1.8 s	0

GTmetrix: *GTmetrix Grade is an assessment of your overall page performance. It reflects both how fast your page loaded for users and how well it is built for performance.*

Web Vitals: *Web Vitals represent a small set of core metrics that indicate whether you are delivering a fast and (what Google calls)* ***delightful experience*** *to your visitors.*

LCP: *LCP measures how long it takes for the* ***largest content element*** *(e.g., a hero image or heading text) on your page to become visible within your visitors' viewport. For a good user experience, aim for an LCP of 1.2 seconds or less.*

TBT: *TBT tells you how much time scripts block during your page loading process. For a good user experience, aim for a TBT of 150 milliseconds or less.*

CLS: *CLS indicates how many layouts shift visitors like your page loads experience. For a good user experience, aim for a CLS score of 0.1 or less.*

Table 5. Similarweb Ranking

	Similarweb											
Website	**Website Rank**			**Engagement**				**Search**			**Traffic from Social Media**	**Display Ads Traffic**
	Category Rank (Lifestyle and Fashion Apparel)	**Country Rank**	**Global Rank**	**Total Visit**	**Avg. Visit Duration**	**Per page visit**	**Bounce Rate**	**Total Search Traffic**	**Organic Search Traffic**	**Paid Search Traffic**		
Myntra	1	38	867	52.34M	05:45	7.54	47.52%	40.69%	74.75%	25.25%	3.50%	1.14%
Ajio	2	63	1413	22.85M	04:57	7.18	51.96%	45.10%	62.71%	37.29%	3.02%	5.92%
Tatacliq	11	299	6755	12.5M	02:42	2.97	66.90%	59.79%	54.77%	43.29%	2.08%	8.57%
Koovs	35	3918	84648	338.04K	01:23	3.41	59.97%	70.80%	82.93%	17.07%	2.47%	5.10%
Max Fashion	5	141	16449	2.98M	03:20	4.6	50.70%	51.12%	68.31%	31.69%	4.32%	1.15%
Nykaa Fashion	3	454	8783	4.43M	02:47	7.41	53.15%	64.08%	67.12%	32.88%	4.06%	1%

4.1 Validating SEO Ranking using PROMETHEE

The parameters suggested and compared by the SEO tools may use many criteria to rank e-commerce sites. For further analysis and rank validation, we used the PROMETHEE technique, which is a time-tested method for outranking. It is one of the multi-criteria decision-making techniques that has been extensively used in various contexts, like selecting the best supplier in the supply chain, the best software in the IT industry, the best technology in the manufacturing sector, etc. These problems are similar to the current problem in the sense that all of them require the best alternative to be chosen according to a set of criteria. The performance of these alternatives along these criteria is assumed to be known. Our choice for PROMETHEE over other MDCM techniques stems from the fact that it is simple and performs satisfactorily when the number of alternatives and criteria is

small. To identify criteria across which the websites should be evaluated, we reached out to ten industry experts. These experts possessed 10+ years of work experience in the domain of digital marketing. Later, weights denoting the importance of each criterion were determined from the same industry experts on a scale of 1-10. Finally, a systematic process for the PROMETHEE algorithm was adopted to determine the best website. This algorithm is described below. The rationale behind using the PROMETHEE method was to give objectivity to the suggested rankings, as the decision-maker (Brans & Vincke, 1985) can easily understand it. PROMETHEE is a simple outranking method suitable for cases where alternatives are finite. Like other MCDM methods, it also requires the decision-maker to find appropriate weights for each decision criteria and the performance of the decision alternative across each decision criteria. This method was used to verify the ranking suggested by the above SEO tools. The following parameters

Table 6. Parameters and Ranking

Parameters	Ranking
Organic traffic (OT)	1
Paid traffic (PT)	5
Bounce rate (BR)	4
Average visit duration (AVD)	2
Backlinks (BL)	6
Total blocked time (TBT)	7
Cumulative layout shift (CLS)	8
Pages/per visit (PPV)	3

The description of the algorithm is as follows.

Let there be m alternatives denoted by $X=(X_1,\ldots\ldots\ldots, X_m)$ and the decision criteria along with each of these alternatives is to be evaluated is $G=(G_1, \ldots\ldots\ldots\ldots, G_n)$. Weight denoting the importance of each criterion is $W=(w_1, \ldots\ldots\ldots w_n)$, where $0 \le w_i \le 1, \sum_{i=1}^{n} w_i = 1$. Let x_{ij} denote the performance of the alternative across the specific decision criterion, and A be the matrix comprising of all such value (A=*(aij)mxm)*. Then the PROMETHEE algorithm can be described through the following steps

Step 1: Normalize matrix A.

Step 2: Compare the alternative A_i and A_r as per the following expression: $P_j(A_i, A_r) = 0 \forall d \le p;$

$$P_j(A_i, A_r) = \frac{d-p}{q-p} \; \forall \; p < d < q; \;\; P_j(A_i, A_r) \; = \; 1, d \ge q$$

Step 3: Calculate the priority index $\pi(A_i, A_r)$ for each pair of alternativs through the expression $\pi(A_i, A_r) = \sum_{j=1}^{n} w_j P_j(A_i, A_r)$.

Step 4: Calculate the value for inflow and outflow function for each pair of alternatives as below

$$\varphi^{+}(A_i) = \sum_{r=1}^{n}\sum_{j=1}^{m} w_j P_j(a_{jr})$$

$$\varphi^{-}(A_i) = \sum_{r=1}^{n}\sum_{j=1}^{m} w_j P_j(a_{ri})$$

$$\varphi(A_i) = \varphi^{+}(A_i) \; - \; \varphi^{-}(A_i)$$

Step 5: Rank the alternatives in ascending order according to the value of $\varphi(A_i)$.

We have collected the opinion of 10 experts to develop the ranking weights of these attributes. Matrix A that constitutes the weight as allocated by the experts is given below:

$$A = \begin{array}{c} \\ My \\ Aj \\ Ta \\ Ko \\ Ma \\ Ny \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} a_{mo} & a_{mp} & a_{mb} & a_{ma} & a_{mb} & a_{mt} & a_{mc} & a_{mp} \\ a_{ao} & a_{ap} & a_{ab} & a_{aa} & a_{ab} & a_{at} & a_{ac} & a_{ap} \\ a_{to} & a_{tp} & a_{tb} & a_{ta} & a_{tb} & a_{tt} & a_{tc} & a_{tp} \\ a_{ko} & a_{kp} & a_{kb} & a_{ka} & a_{kb} & a_{kt} & a_{kc} & a_{kp} \\ a_{mo} & a_{mp} & a_{mb} & a_{ma} & a_{mb} & a_{mt} & a_{mc} & a_{mp} \\ a_{no} & a_{np} & a_{nb} & a_{na} & a_{nb} & a_{nt} & a_{nc} & a_{np} \end{bmatrix} \end{array}$$

The value of the elements of this matrix can be derived from various publicly available data. For example value of a_{mo} is 43.9 million from the data. These data points are normalized as mentioned in step 1.

The preference matrix for each alternative (i.e. Myntra, Ajio, Tatacliq, etc.) is given below as per the weight allocated from 10 experts.

$$P_{My} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.00 & 0.01 & 0.04 & 0.01 & 0.2 & 0.3 & 0.15 \\ 0.21 & 0.00 & 0.21 & 0.23 & 0.05 & 0.22 & 0.17 & 0.12 \\ 0.15 & 0.00 & 0.00 & 0.08 & 0.11 & 0.15 & 0.08 & 0.13 \\ 0.00 & 0.00 & 0.13 & 0.00 & 0.13 & 0.17 & 0.06 & 0.17 \\ 0.04 & 0.00 & 0.07 & 0.14 & 0.00 & 0.13 & 0.22 & 0.15 \\ 0.11 & 0.00 & 0.04 & 0.11 & 0.13 & 0.00 & 0.15 & 0.13 \\ 0.2 & 0.00 & 0.02 & 0.18 & 0.15 & 0.06 & 0.00 & 0.06 \\ 0.03 & 0.00 & 0.22 & 0.22 & 0.22 & 0.13 & 0.31 & 0.00 \end{bmatrix} \end{array}$$

$$P_{Aj} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.32 & 0.05 & 0.10 & 0.00 & 0.02 & 0.14 & 0.24 \\ 0.03 & 0.00 & 0.28 & 0.08 & 0.00 & 0.18 & 0.17 & 0.32 \\ 0.16 & 0.09 & 0.00 & 0.21 & 0.00 & 0.02 & 0.03 & 0.15 \\ 0.24 & 0.21 & 0.08 & 0.00 & 0.00 & 0.21 & 0.16 & 0.05 \\ 0.07 & 0.12 & 0.08 & 0.32 & 0.00 & 0.08 & 0.28 & 0.14 \\ 0.28 & 0.18 & 0.24 & 0.15 & 0.00 & 0.00 & 0.08 & 0.09 \\ 0.21 & 0.14 & 0.10 & 0.05 & 0.00 & 0.03 & 0.00 & 0.21 \\ 0.09 & 0.08 & 0.15 & 0.18 & 0.00 & 0.12 & 0.10 & 0.00 \end{bmatrix} \end{array}$$

$$P_{Ta} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.16 & 0.34 & 0.14 & 0.17 & 0.22 & 0.20 & 0.00 \\ 0.15 & 0.00 & 0.18 & 0.03 & 0.12 & 0.10 & 0.13 & 0.00 \\ 0.12 & 0.20 & 0.00 & 0.11 & 0.15 & 0.14 & 0.07 & 0.00 \\ 0.34 & 0.13 & 0.10 & 0.00 & 0.13 & 0.13 & 0.01 & 0.00 \\ 0.32 & 0.11 & 0.09 & 0.18 & 0.00 & 0.17 & 0.14 & 0.00 \\ 0.22 & 0.19 & 0.07 & 0.01 & 0.10 & 0.00 & 0.22 & 0.00 \\ 0.09 & 0.01 & 0.16 & 0.13 & 0.34 & 0.13 & 0.00 & 0.00 \\ 0.07 & 0.03 & 0.20 & 0.19 & 0.12 & 0.32 & 0.15 & 0.00 \end{bmatrix} \end{array}$$

$$P_{ko} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.19 & 0.14 & 0.16 & 0.12 & 0.05 & 0.15 & 0.11 \\ 0.00 & 0.00 & 0.07 & 0.11 & 0.22 & 0.08 & 0.09 & 0.02 \\ 0.00 & 0.06 & 0.00 & 0.06 & 0.09 & 0.13 & 0.03 & 0.04 \\ 0.00 & 0.16 & 0.11 & 0.00 & 0.19 & 0.00 & 0.14 & 0.05 \\ 0.00 & 0.03 & 0.00 & 0.02 & 0.00 & 0.07 & 0.19 & 0.03 \\ 0.00 & 0.02 & 0.18 & 0.12 & 0.08 & 0.00 & 0.16 & 0.03 \\ 0.00 & 0.11 & 0.13 & 0.03 & 0.03 & 0.09 & 0.00 & 0.18 \\ 0.00 & 0.04 & 0.05 & 0.00 & 0.15 & 0.06 & 0.22 & 0.00 \end{bmatrix} \end{array}$$

$$P_{Ma} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.17 & 0.24 & 0.00 & 0.20 & 0.03 & 0.25 & 0.06 \\ 0.22 & 0.00 & 0.22 & 0.00 & 0.11 & 0.04 & 0.02 & 0.13 \\ 0.03 & 0.24 & 0.00 & 0.00 & 0.18 & 0.10 & 0.31 & 0.07 \\ 0.31 & 0.05 & 0.22 & 0.00 & 0.22 & 0.02 & 0.14 & 0.17 \\ 0.06 & 0.07 & 0.14 & 0.00 & 0.00 & 0.20 & 0.20 & 0.05 \\ 0.14 & 0.18 & 0.17 & 0.00 & 0.10 & 0.00 & 0.11 & 0.12 \\ 0.11 & 0.04 & 0.03 & 0.00 & 0.22 & 0.22 & 0.00 & 0.31 \\ 0.25 & 0.02 & 0.05 & 0.00 & 0.04 & 0.18 & 0.24 & 0.00 \end{bmatrix} \end{array}$$

$$P_{Ny} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ Avd \\ Bl \\ Tbt \\ Cls \\ Ppv \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & Avd & Bl & Tbt & Cls & Ppv \end{array} \\ \begin{bmatrix} 0.00 & 0.19 & 0.00 & 0.00 & 0.10 & 0.21 & 0.06 & 0.16 \\ 0.14 & 0.00 & 0.00 & 0.00 & 0.13 & 0.13 & 0.02 & 0.11 \\ 0.02 & 0.06 & 0.00 & 0.00 & 0.25 & 0.20 & 0.25 & 0.05 \\ 0.25 & 0.03 & 0.00 & 0.00 & 0.05 & 0.12 & 0.19 & 0.15 \\ 0.10 & 0.11 & 0.00 & 0.00 & 0.00 & 0.27 & 0.03 & 0.32 \\ 0.13 & 0.16 & 0.00 & 0.00 & 0.06 & 0.00 & 0.16 & 0.10 \\ 0.11 & 0.21 & 0.00 & 0.00 & 0.14 & 0.07 & 0.00 & 0.03 \\ 0.12 & 0.05 & 0.00 & 0.00 & 0.02 & 0.21 & 0.14 & 0.00 \end{bmatrix} \end{array}$$

$$P_{Ko} = \begin{array}{c} \\ Ot \\ Pt \\ Br \\ AVD \\ BL \\ Tbt \\ Cls \\ CLS \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & AVD & Bl & Tbt & Cls & PPV \end{array} \\ \begin{bmatrix} Ot & Pt & Br & AVD & Bl & Tbt & Cls & PPV \\ 0.00 & 0.30 & 0.01 & 0.04 & 0.01 & 0.2 & 0.3 & 0.15 \\ 0.21 & 0.00 & 0.01 & 0.2 & 0.02 & 0.31 & 0.08 & 0.06 \\ 0.15 & 0.14 & 0.31 & 0.14 & 0.14 & 0.06 & 0.11 & 0.02 \\ 0.00 & 0.07 & 0.06 & 0.2 & 0.3 & 0.32 & 0.17 & 0.08 \\ 0.04 & 0.03 & 0.02 & 0.17 & 0.01 & 0.02 & 0.14 & 0.11 \\ 0.11 & 0.04 & 0.11 & 0.06 & 0.08 & 0.02 & 0.31 & 0.14 \end{bmatrix} \end{array}$$

$$P_{ta} = \begin{array}{c} Alternatives \\ attributes \\ Ko \\ Ta \\ Ny \\ My \\ Aj \\ Mo \end{array} \begin{array}{c} \begin{array}{cccccccc} Ot & Pt & Br & AVD & Bl & Tbt & Cls & PPV \end{array} \\ \begin{bmatrix} 0.00 & 0.30 & 0.01 & 0.04 & 0.01 & 0.2 & 0.3 & 0.15 \\ 0.21 & 0.20 & 0.01 & 0.2 & 0.02 & 0.31 & 0.08 & 0.06 \\ 0.15 & 0.14 & 0.31 & 0.14 & 0.14 & 0.06 & 0.11 & 0.02 \\ 0.00 & 0.07 & 0.06 & 0.2 & 0.3 & 0.32 & 0.17 & 0.08 \\ 0.04 & 0.03 & 0.02 & 0.17 & 0.01 & 0.02 & 0.14 & 0.11 \\ 0.11 & 0.04 & 0.11 & 0.06 & 0.08 & 0.02 & 0.31 & 0.14 \end{bmatrix} \end{array}$$

5. Results and Discussion

Several parameters were taken into consideration, like the domain score, on-page SEO score, bounce rates, etc. When we type the keyword *"Top fashion websites in India"*, there is a website on the first page that ranks the fashion website in which Myntra occupied a top spot, followed by other websites like Tatacliq, Koovs, Shoppers Stop, etc. According to the data extracted by the different SEO tools- Myntra has the highest organic monthly traffic, organic traffic, organic keywords, lowest bounce rate, i.e. 31.58%, and highest traffic cost. The Myntra website is on the top in these parameters because it is a fashion marketplace, and it has also enabled digital mall features to bolster the presence of different brands and create an ambience for offline brand stores experience. As a repercussion, they also witnessed a 30% increase in the CTRs (Click-Through Rates). They augment the digital features and experience due to the shift in online shopping behaviour of the consumers, and this strategic move led to the increase in customer engagement. The other websites such as Ajio, Tatacliq, Max, and Nykaa need to focus on generating more organic reach to reach Myntra's level. They should focus more on loading time, content, and description as well as delightful experience for the customers. Ajio is working hard to outsmart Myntra and other competitors. It has an on-page SEO score of 68, which is the highest; this implies that Ajio is also improving the technical SEO, content, user experience, and meeting the SEO criteria. It still has more scope for improvement. A well-optimized site has a score of >80%. Ajio is creating and improving user experience through its omnichannel strategy, and it should increase its share to more than 9% in the fashion segment. Other websites should also need to improve these parameters to ensure visibility. It also has the lowest category rank. The lowest bounce rate, i.e. 59%, means that the website should be modified so that customers can spend more than one page on a website. The websites should ensure credibility, and other websites need to boost their performance scores, especially the core web vitals, page quality, keywords from branded traffic; there are variations and huge deviations in the country and global ranks, which needs more room for improvement.

The table below gives the final rank by obtaining the frequency of the ranks given by the SEO tools.

φ^{+} is outflow and $\varphi^{gh\text{-}Rate}$ is the inflow therefore φ is the resultant flow Myntra.com has the highest φ (1.0000) value followed by Ajio (.72) and Nykaa Fashion (0.4083). The results of MCDM support the results concluded with the software ranking, which also ranked Mytra.com at the top. (Table 7)

Table 7. SEO Tools Ranking

Website	Semrush	UberSuggest	GTmetrix	Similarweb	Final Rank
Myntra.com	1	1	1	1	1
Ajio.com	2	2	5	2	2
Tatacliq.com	3	4	7	5	5
Koovs.com	7	7	6	7	6
Max Fashion	6	6	3	4	4
Nykaa Fashion	4	3	4	3	3

Table 8. Result of PROMETHEE Analysis

Alternatives	φ +	φ –	φ
Myntra.com	1 .0000	0.0000	1.0000
Ajio.com	1.0000	0.2800	0.72
Nykaa Fashion	0.6383	0.2300	0.4083
Max Fashion	0.6466	1.0000	-0.3534
Tatacliq.com	0.4444	1.0000	- 0.5556
Koovs.com	0.0000	0.7838	- 0.7838

Table 9. Final Ranking

Myntra.com	(1)
Ajio.com	(2)
Nykaa Fashion	(3)
Max fashion	(4)
Tatacliq.com	(5)
Koovs.com	(6)

6. Conclusion and Future Research

Maintaining the online fashion retail website content happens to be an imperative determinant for website ranking. Online fashion retail has seen a surge due to the presence of both national and international players, each fighting for its share of the pie. The study concludes that online fashion retailers have to consciously ensure the placement of content and keywords to ensure that their website appears in the top 10 results while consumers search for fashion products on the web. The study uses two unique approaches, namely usage of SEO tools such as Semrush, Similarweb, GTmetrix, Ubersuggest, to understand the ranking of the e-fashion retailers. To further validate the rankings, the authors have used the PROMETHEE (MCDM) outranking approach to conclude that Myntra.com outperforms various ranking parameters such as organic traffic, page per visit, and duration, followed by Ajio.com and Nykaa Fashion, respectively. The study will support the digital marketing managers working for e-fashion retailers to optimize the search results for their brand and enhance the brand visibility for better customer conversion. Furthermore, the ranking method used in the study will act as a guideline for future research on ranking websites for any sector or industry. In addition, it should be noted that we have used ranking parameters as suggested by experts in the industry that can be further explored to make the ranking parameters list more exhaustive. This can be a future research agenda.

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Upgrading Indonesian Dairy Farmer Value Chain based on Economic Resilience Approach during Covid-19

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Abstract

The Indonesian dairy industry is one of the many industries that suffered during the Covid-19 pandemic. Also, dairy farmers experience a low level of economic resilience. To find an answer to this challenge, the author adopts an innovative approach in this research by using the parameters of economic resilience to ensure the sustainability of the dairy farmer's business. It uses mathematical modelling for estimating the ratio of economic resilience ($R_s^* = 0.96$), and based on that; it becomes an indicator for upgrading the dairy farmer's value chain. In addition, we found strategies for increasing the bargaining power of the dairy processing companies by strengthening the role of cooperative as a manifestation of horizontal integration.

Keywords*: Supply Chain Management (SCM), Value Chain (VC), Dairy Supply Chain, Bottom-Up Pyramid (BOP), Strategic Management.*

1. Introduction

Two challenges become barriers to achieving supply-demand equilibrium in any dairy milk supply chain. The first is related to the discrepancy between supply and demand, and the second is related to the low capability of farmers to meet the industry's specifications (Moran & Morey, 2015). The Indonesian dairy supply and demand gap began in 1985 and went through up to 2012 when the production of national dairy milk rose from approximately 0.2 million to 1 million tons due to the increasing population. It confirms a significant increase in dairy import from 1 million to 3.7 million tons from 2000 to 2018. Import activities happen because of the inability of the national production to cover the national demand. However, the country has had a significant increase in production since 2015, reaching 923,000 tons of fresh milk in 2017. Even though this increase was still far less than the national demand for dairy milk, it was very encouraging for business players to use the opportunity to get to a broader market. Therefore, the Blue Print of Dairy Sector 2013-2025 was initiated to lower the supply-demand gap. The targeted vision is to achieve milk production of 2.75 and 5.32 million tons in 2020 and 2025, respectively (Badan Pusat Statistik, 2020a). However, a gap still exists between the targeted production of milk and the actual production of milk of about 1.8 million tons or 34% from the target.

Currently, the Indonesian dairy market shows approximately 5% growth per annum even though the Covid-19 pandemic adversely impacted it. According to Central Bureau Statistic Indonesia, domestic supply capacity can only contribute 20% of the total national milk demand. It means that 80% of the remaining demand would have to be contributed by import. Meanwhile, domestic production growth is only about 3% per year, while the national demand growth is 4% per year (Badan Pusat Statistik, 2020b, 2021). With this limited growing percentage, Indonesia cannot fulfil the national demand quickly.

Consequently, the government has established a strategy to overcome this matter by increasing Foreign Direct Investment (FDI) flow into Indonesia. Meanwhile, the dairy product's growth rate from 2016 to 2020 has achieved a significant value of 9.9% (Yuningsih, 2020). This phenomenon requires foreign capital companies to increase their production capacity, resulting in significant market coverage (Kemenperin, 2021). Compared to other ASEAN countries, Indonesia has the lowest milk consumption amounting to 14.3 litres per capita, while Malaysia is at 50.0 litres, Thailand at 33.7 litres, and the Philippines at 22.1 litres per capita (Oliveros, 2019). However, the Indonesian milk consumption rate predicts a significant increase in the future (Moran & Morey, 2015).

Indonesia is currently considered a productive country, with 70% of Indonesians being within the "working age," contributing to the significant growth of milk demand. The growth of dairy products is also supported by increasing awareness of healthy life among consumers in urban areas that create trends before the pandemic. Indonesia's largest import share of dairy products is from New Zealand, accounting for 28% of total imports, followed by the USA with 23%, Australia with 10%, and the Netherlands with 5%.

The Indonesian dairy industry processing liquid milk products consists of 13 companies handling dairy supply to national demand and limited exports. Almost 77% milk supply to dairy processing companies comes from traditional farmers, which have an average of three cows per household, and on average, they produce less than 10 litres. In contrast, modern farmers can produce more than 20 litres through cattle with superior milk-producing traits. Here calving periods are shorter as 13-14 months than animals of small-scale farmers, with more extended calving periods of 18-20 months. Friesian Holstein and Jersey breeds are two major breed categories Indonesia has for production. These breeds are suitable for the Indonesian climate because they can survive with varying altitudes of 250m below sea level and 500m above sea level in tropical areas (Pangestu et al., 2000).

Dairy farmers cannot be separated from the role of inclusiveness of business. This action is closely related to the role of local cooperatives in bridging activities of the farmers and dairy processing companies. However, several obstructions create a supply imbalance. This issue somehow becomes something familiar that happens in the dairy supply chain. It begins with lower product quality that causes dairy processing companies to reject the farmers' product because they follow certain specifications. This issue will make both parties suffer the loss, such as farmers getting no profit directly and the inability of dairy processing companies to meet the national demand.

Dairy farmers in Indonesia consider the same mostly as a secondary occupation besides the main occupation of rice farming or other occupations. Based on the dairy farming

technique principle, this paradigm is still far from the ideal; therefore, sub-optimal revenue achievements will be the case (Guntoro et al., 2016). From this condition, it is assumed that limited capability results from the lack of business focus. About 90% of dairy cattle are personally owned; therefore, dependency of business operation attaches to the farmer as owner. Therefore, the capability of farmers becomes a determinant of the business direction. Despite the demand that has not yet been fulfilled, many dairy farmers don't generate fast income in reality. The imbalance happens because of a farmer's inability to operate or relate to the unfriendly business environment. Thus, they know that they cannot rely only on the dairy business and must find another fast-income business to fulfil their daily necessities. Many also think that becoming dairy farmers is unattractive because it is difficult to achieve economies of scale. Moreover, in 2012 the government limited beef import, and therefore dairy farmers tend to slaughter their cattle to grasp the opportunity because the revenue generated from beef is more attractive than becoming dairy farmers (Rohani et al., 2017). Accordingly, this research recommends how farmers can achieve economic resilience by upgrading the value chain using a mathematical modelling approach.

2. Literature Review

2.1 Supply Chain Improvements

Designing for improving the added value of local dairy value chain should be conformed with the global supply chain and matching with the Indonesian target scheme (Blue Print Dairy Sector 2013-2025) as a goal for triggering activity to be on track because a target is a shared value that needs to be carried out optimally (Ricciotti, 2020). In order to give an added value to agribusiness, in which the majority of the actors are at the bottom of the pyramid (BOP), it is required to overcome cultural and institutional gaps between the industry and BOP actors. The culture of BOP is inclusiveness, whereas that of the industry is exclusiveness; therefore, there is a need to create a platform that bridges the concept and value between those parties because BOP tends to be the most disadvantaged party when there is a transaction failure. Because of this, BOP requires an innovative and inclusive business model for strengthening the bargaining position by integrating the horizontal level of the BOP's actors in the supply chain (Danse et al., 2020; German et al., 2020).

Organizing dairy farmers in Indonesia is not an easy task because most farmers own cows. They have free will in determining the direction of their business which is sometimes out of sync with the business processes. This is understood by both the dairy company and the farmers. This problem will lead to a vicious circle that makes both parties suffer. Inability to perform appropriately can be solved using the quality of incentive method, which can trigger farmers to improve productivity (Matre et al., 2020; Treurniet, 2021). This method is straightforward and translates into a modest language that triggers farmers to do their best to fulfil the target, hoping to get more profit when they exceed the target.

The foundation of this research is from Susanty et al. (2019), who used a dynamic modelling system to design scenarios based on policies that applied in the global supply chain of the Indonesian dairy industry to compute which policies happen to have optimal returns. This research adopted a stock and flow of dynamic system diagram to create a supply chain foundation and a mathematical model for clarifying the causal relation from one node (actor) to another node so that the behaviour of action can be known from the mathematical relation to fit the empirical observation.

In the supply chain, actors have a relationship for their responsibility of supplying the good/service. According to Susanty et al. (2018), each of the actors has to follow a shared vision of collective reasoning of doing business. Balanced Scored Card (BSC) is used as a platform that applies the shared value very well. Then the result is a measurement of how close the activity is to the shared value. Our research accommodates the idea of using BSC, which has measurement parameters. It uses a variable that can be measured and computed numerically, and hence a mathematical model can be done in detail.

To find out the causal relationship between actors, we can not only use a mathematical modelling approach but also can use a DEMATEL (Decision-Making Trial and Evaluation Laboratory) approach for creating a model for knowing the degree and direction of influence which interactively interconnects between one actor to another (Singh et al., 2020; Susanty et al., 2020; Yazdi et al., 2020). However, inter-relationship has not yet been generally determined by the DEMATEL approach. By using mathematical modelling, we can observe and describe the phenomena that represent the interrelationship of variables. This is the underlying principle of the current investigation to explain

the meaning of interrelation between actors in supplying goods to the existing constraints in the supply chain.

2.2 Economic Resilience Approach

Before Covid-19 hit, supply chain regulatory research focused on regulating green supply chains (Tarigan & Jaga, 2021; Siagian et al., 2021). This research does not directly emphasize economic resilience. Since the world is in a post-pandemic Covid-19 situation, it is understandable that most BOPs are actors, the majority of which are affected negatively. Furthermore, since they play an essential role in the dairy supply chain, all forward actors are generally negatively affected as well (Nordhagen et al., 2021). However, government attention to this situation has been low at the time of the pandemic. Thus it created a delay in making policies related to economic resilience for the vulnerable groups (Olivia et al., 2020). Hence, this research uses economic resilience as a parameter for ensuring value chain creation and sustainability through economic resilience. The value chain approaches can be divided into six categories based on the evolution into value networks: sustainability, globalization, collaboration, intangible assets, flexibility, and agility (Ricciotti, 2020). The economic resilience factor is included in the sustainability dimension.

Adapting from Das et al. (2021), this research includes the economic resilience approach for building supply chain parameters to model supply chain situations. This research encompasses that cattle feed supplier goes to a dairy farmer and continues to cooperate, and finally goes to the dairy processing company. The value chain aims to improve business competitiveness (Rofaida, 2019).

3. Methodology

Considering the parameters and the global dairy supply chain entities, a concept of mathematic modelling is formalized. Then, the actual conditions are adjusted (Susanty et al., 2019). The object of this research is the cow milk cluster in Getasan District, Semarang Regency, Indonesia. The research process begins by identifying the activities/functions and actors involved in the chain. The data collected relates to tracing the flow of activities, goods, money, income, and added value; so that it can be used to map the value chain and root definition limited to customers, actors, transformations, and owners. The data is collected using a survey method on chain actors, including feed providers (green fodders), farmers, cooperatives/container traders, milk processing companies, and distributors of dairy products. In addition, interviews were also conducted with Business Development Services (BDS), universities, government agencies, and veterinarians as service providers. The number of value chain actors (excluding supporting institutions) sampled was 40 people selected by snowball sampling technique. The sampling criterion completes representatives in each link along the dairy value chain in the cluster.

Figure 1 shows the result of the discussions that are arranged in the value chain base (Sulandjari, 2012). The activities in the supply chain are actors, owners, the perspective of business, and market behaviour. It is a sequence of work performed continuously, in which there is a supply activity of pre-transformed product until the customer receives it. In contrast, actors are somebody/organization that runs the process of product transformation. Owner refers to the organization/individual to which the business belongs. While doing the business, the owner needs to access multiple viewpoints to define how the actors interact with the process at various locations within the supply chain framework environment (Keates et al., 2020). Perspective is how the owner believes in his viewpoints and responds to them.

The supply chain process is divided into four bigger stages, which can be seen in Figure 2. The first stage is related to supplier of feed and nutrition supply activities- its flow starts from a supplier of feed and nutrition (green fodder) that supply two products of green fodders (I_{GF}) and concentrate/ nutrition/supplements (I_{cs}). Price of *GF* and *CS* become a cost of dairy farmers P_{GS}, $P_{CS} \rightarrow C_{GS}$, C_{CS}. The second stage is from the daily nursery of farming. The entities owned by the farmer are the number of cattle (n_c) , the volume of milk (n_m) in a litre, and the number of differentiated products such as soap, milk, snacks and beverages made from milk (n_{MS}, n_{SB}). The third stage is the collection stage from farming activities. The product price is denoted by P_i and the corresponding cost of products P_i in C_i *and* C_{OP} as the embedded costs that occur from product and costs that occur in its operation (C_{MS}, C_{SB}, P_{GS}, P_{CS}, C_{OP}) and the inventory (INV_{Cost}). When milk is ready (l_{supp}) , the milk collector from the cooperative comes and stores it in the milk tank with coefficient capacity *CAP*. The last stage is taken from the process in the Milk Processing Company, which has the entity of total litres needed with the given price as a cost to the company as P_{mi}.

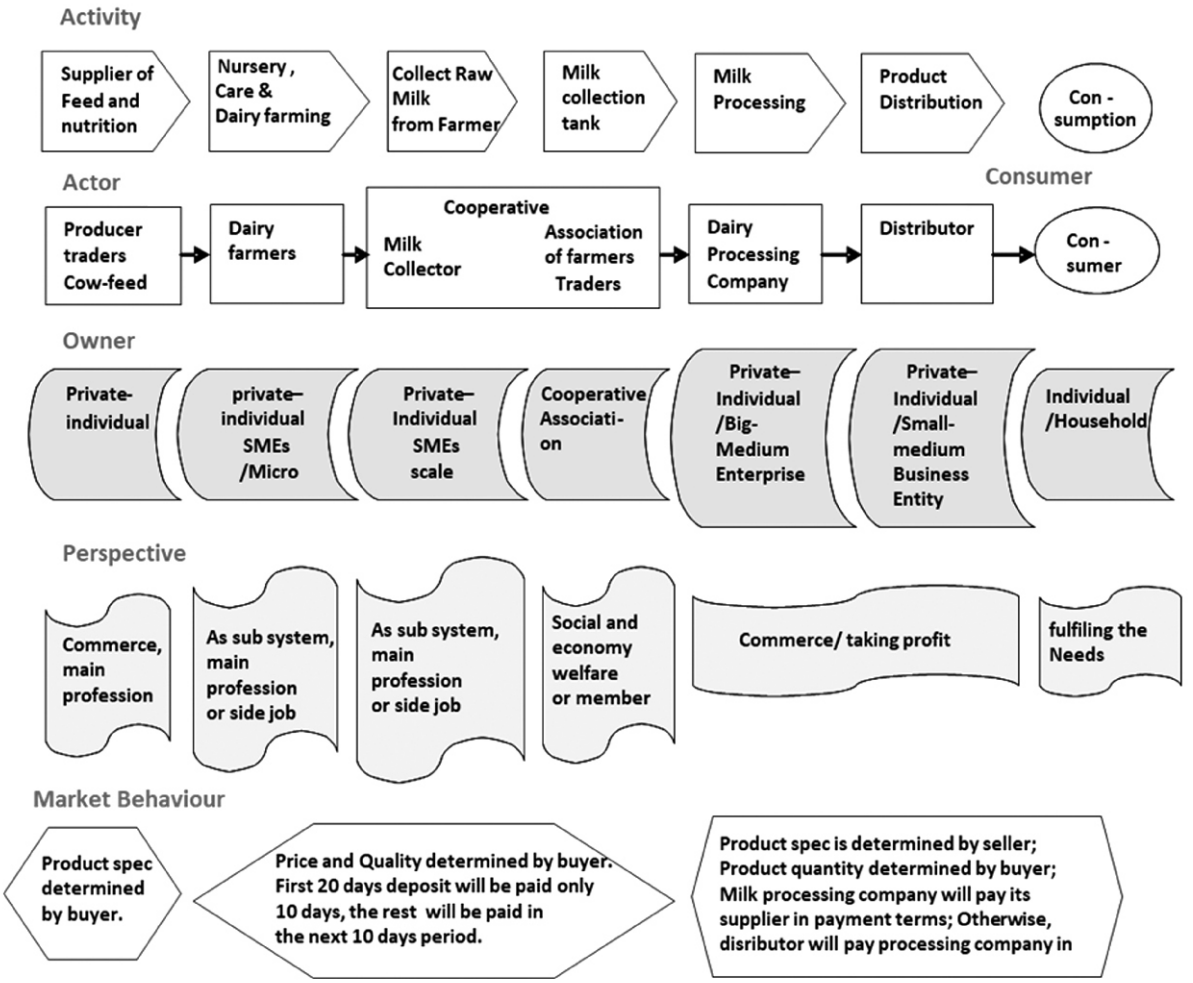

Figure 1. Supply Chain of Getasan's Dairy Milk

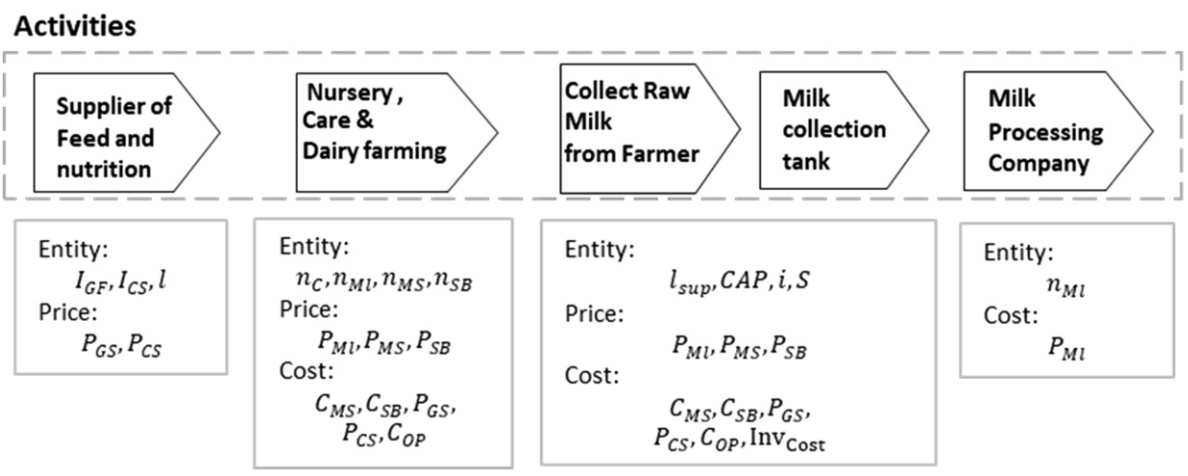

Figure 2. List Entity and Parameter based on Supply Chain Process

3.1 Notations

S: Set of actual suppliers where $s_i \in S$. This equation represents green fodder supplier (s_{gf}) and concentrate supplier *(S_{gf}). and concentrate supplier (S_{sc}).* We know that $S = S_{gf} + S_{sc}$

I: Set of item or product supplied by *S*. This supply item is $i \in I$ *and* I_{gf} and for supplying green fodder and for supply concentrate supplier.

L: Set of the location where $I \in L$ of actual supplier $s \in S$ located. Thus respectively, we have l_{gf} and l_{sc} as well.

N: Set of node distributions, $n \in N$, where n_{gf} is the node of green fodder supplier point of supply and n_{sc} is the node of supply concentrate supplier distribution house. Even though some of the samples have the same seller, we differentiate the subject as two different notations with respect to this equation.

3.2 Parameters

The parameters that were used in this mathematic modelling were:

C_{PK} : Cost per cattle

C_{GF} : Cost of green fodder

C_{SC} : Cost of supply concentrate, pellets, and or cattle's vitamin

LA : Land availability for growing green fodder

α_C : Increasing cost of cattle

n_C : Number of cattles

P_{MK} : Fresh Milk Price, sold to the industry

P_{MS} : Price of Dairy Soap sold to the customers

P_{SB} : Price of Dairy Snacks and Beverages

inf : Variable of inflation

C_{LB} : Cost of Laboratory Equipment

C_{CS} : Cost of Cooperative Subscription

C_{CM} : Cost of Cooling Machines

C_{FT} : Cost of Aid Farm Technician service

C_{IC} : Cost of Insemination

C_{MV} : Cost of Medicines and Vaccines

C_{MS} : Cost of Milk Soap

C_{SB} : Cost of Snack and Beverages

3.3 Decision Variables

$\overline{t_{sup}}$ is the average of lead time supply product *i* to the destination node. We assume that a supply network is formed by the set of suppliers, where a set of products *i* are procured by the dairy farmers. The locations of $s \in S$ are in different areas. The detailed composition of transportation and handling costs is assumed to be already included in the product cost. Therefore, it is not clarified how the composition reacts one to another. Since there are many suppliers, *S* generalization of variables α_{GF} are taken.

$$C_{GF} = C^*_{GF} + {}^{\alpha_{GF}}/_{inf}$$
$$C_{SC} = C^*_{SC} + {}^{\alpha_{GF}}/_{inf} \quad (1)$$

α is constant that has a contribution from handling and transportation cost, while *inf* is the inflation variable that influences the monetary value.

S_{SC} is the supplier of concentrate that maintains their stock and supply to meet dairy farmers' demand. In this research, the breakdown of the influence of stock toward lead-time supply directly is not detailed. Moreover, the focus is given only when the delivery time *S* is already set to the product via cooperatives. (*S* is responsible for maintaining stock in the Cooperative warehouse). Since the focus is only on the supply product, model transportation problems of supply chain management are not attempted. When dealing with the Covid-19 situation, the focus is given only on the availability of a product i_{GF} and i_{SC} in the warehouse. Therefore, the availability of goods supply would be $i^* = i.Pr(\%)$, with *Pr* as the constant probability of security, derived based on the average available product in the warehouse.

3.4 Formulation of Model

Constraint 1: Estimate overall requirement of supply item derived from dairy farmers, where output $z = Ci$.

$$I_{GP+SC} = \sum_{c \in C} \sum_{m \in M} z_{GP} + z_{SC} \forall s, i \quad (2)$$

Constraint 2: The balance supply order received by the supplier to a number of products in the inventory.

$$I_{GP+SC} = \sum_{c \in C} \sum_{m \in M} z_{GP} + z_{SC} \qquad \forall s, i \quad (3)$$

Constraint 3: Limit assignment of product/item to supply based on capacity.

$$\sum_{x\in S} I_{GP+SC}^{inv} = \sum_{c\in C}\sum_{m\in M} z_{GP} + z_{SC} \quad (4)$$

Constraint 4: Each input item is assigned to supply from more than one location.

$$\sum_{x\in S}\sum_{l\in L} i \geq 1 \qquad \forall i \quad (5)$$

Constraint 5: Compute average per day inventory or supplied by a supplier for operating 20 days per month.

$$AVG\ I_{supp} = \sum_{s\in S} \frac{I_{supp}}{20(\sum s)} \qquad \forall i, n, g \quad (6)$$

Constraint 6: Allocates distribution nodes to compute ensuring the replenishment, where *g* is the number of place distribution nodes.

$$\sum_{g\in G} I_{supp} \leq Threshold_{Cap} \qquad \forall s, n, g \quad (7)$$

The Objective Function 1: Maximize the resilience *Rs,* which is defined as measuring the coefficient of performance supply and demand as economic rotors. *Rs is* also defined by how dairy farmers are able to stand out in economic activity with the certainty of capability supply by having particular demand.

$$Rs = \frac{Quantity\ item\ procured\ (needed)\ to\ fulfill\ the\ requirements}{Quantity\ supply,\ that\ supplied\ by\ the\ supplier} \quad (8)$$

Optimum *Rs* is one because quantity items are procured equally with quantity supply; in other words, *Rs* will be optimum if there is equilibrium.

if Rs> 1: there is a farmer that has not yet been supplied

if Rs< 1: Has two meanings.

For *Rs< 1,* it means that it has two meanings. First, it is related to business opportunities because there are still greater markets, and secondly, the farmer's profit is decreasing, or even the farmer is having difficulty in paying back the supplier.

Objective Function 2: Minimize the total cost *(TC),* were

TC = Cost of supply + Cost of Distribution + Cost of Transportation

Here with we enclose the supply activities as follows.

4. Result and Discussion

In the present study, an analysis generated to the FGD results in data with supply chain actors. The results can be seen in Figure 3. Operating costs (blue diamond nodes) began to increase since April 27, 2021, resulting from government policy decisions that began to implement physical restrictions, and several centres of the crowd were closed due to Covid-19 (Pemprov Jateng, 2020). The increase in operating costs was due to a limited supply of animal feed ingredients, so farmers switched to makeshift animal feed that they could collect independently. This increase in operating costs resulted in a drastic decrease in daily profit (blue star node). However, farmers can still supply milk and other dairy products, shown on the milk income graph (orange box node) and the dairy income graph (gray triangle node). Furthermore, when viewed from the total income (yellow cross node), farmers still have a stable income following a report from the Central Statistics Agency that the milk processing industry still has a stable market (Lath et al., 2020).

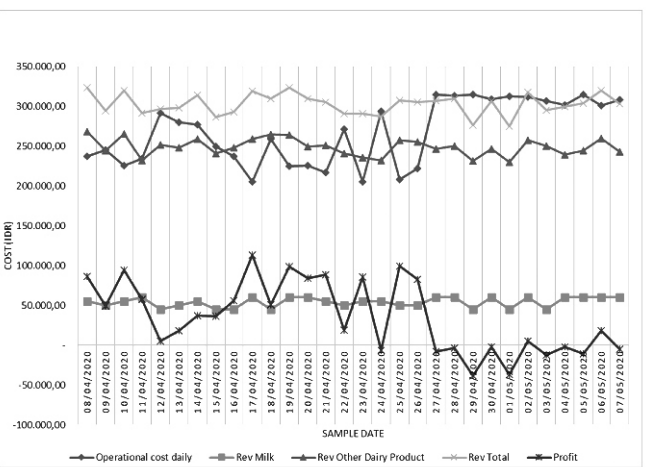

Figure 3. Thirty Days Period of Cashflow

4.1 The Problem in Financing Time

The FGD also stated a delay of payment for ten days to guarantee the quality of milk provided by the farmers. This problem can also be seen from Figure 4, which shows that payments made during ten days have made farmers experience financial management difficulties. The problem of payment delays can be resolved by involving third parties such as Cooperatives which can advance finance for operational activities, and then farmers can return them with a profit-sharing system.

By using mathematical modelling, we can solve these cases through the linear equation approach. It can be written that the x litre supply is delayed by $t=10$ days so that it can be rewritten as $x(t-10)$. Where the desired income must exceed total costs or $(t) \geq C_{tot}(t)$. Where the total cost (C_{tot}) is the accumulated cost over ten days, or it can be written from time $t: (t-10) \geq t \geq t$. Then the equation for the total cost and income per 10 days can be written:

$$\sum_{t-10}^{t} In(t) \geq \sum_{t-10}^{t} C(t) \tag{9}$$

From this Equation and Figure 4, we can conclude that the farmer bears the operational costs during the first ten days. Hence, in order for Equation 9 to be fulfilled, the $t-10$ tempo setting must be set to t–0 on the first day. Farmers must get cash funds so that cash flow can be well controlled for the first-time production activities. Whereas the value of $Avg(In^*)$ is a constant mutually agreed upon between farmers and Cooperatives.

$$\begin{gathered} if(t=0): \\ \left\{Est\left(\sum_{t-10}^{t} In(t)\right) = Avg(In^*)\right\} \\ else: \\ \left\{\sum_{t-10}^{t} In(t) \geq \sum_{t-10}^{t} C(t)\right\} \end{gathered} \tag{10}$$

4.2 Economic Resilience

The value of the economic resilience factor (Rs) is entered in the conditions before optimising the tempo setting (Equation 10). The blue triangle curve (Figure 5) amounted to 0.35, and after the income report was obtained on the 11th day, the value of the Rs ratio jumped with an average of 0.96. After Equation 10 was put into effect, the new value of Rs^* starting from the first period (08/04/2020) to the 30th period (06/05/2020) experienced stability, with an average value of 0.975.

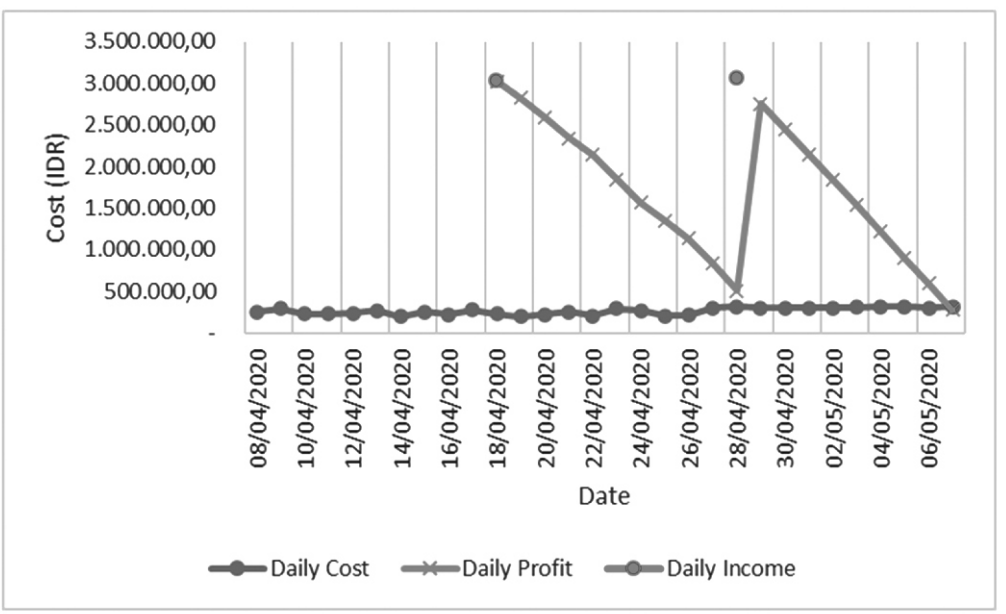

Figure 4. Daily Profit

Before optimization, it was found that there are six times *Rs>1*. It means six times the supply goods from the supplier do not meet the requested order from farmers. This discrepancy happens because of a delay in supply. On the other hand, when *Rs<1* is happening, the supplier's goods are ready, but the farmer cannot afford to pay. However, the dynamic signal from 19/04/2020 has been classified as a stable signal with a standard deviation of less than 5%. This phenomenon also happens when $Rs*$ is put into Equation 10.

Based on the results of the Rs value of 0975 obtained, daily C_i and daily I_{ni} are simulated, as shown in Figure 6. In the figure, it can be seen that the daily total cost on 27/4/2020 is higher than the daily income, although it can be seen that the ratio of Rs has remained stable from 08/04/2020 to 07/04/2020.

4.3 Upgrading Value Chain Based on the Sustainability of Economic Resilience

In order to maintain a stable and sustainable economic resilience value, it is necessary to do strategic planning by ensuring that product supply can be maintained from green fodders, farmers, and cooperatives to milk processing companies.

The development of value chains in farmer-oriented milk processing supply activities can be seen in Figure 7, which

explains that cooperatives as established institutions can maximize their role as inventory and regulate operational, administrative activities to only focus on their milk production activities (Soetriono et al., 2019). This cooperative's role can become a platform that collaborates with externals more professionally to improve the quality of milk production and its processed products (Ramadanti et al., 2017). The strategy to increase the role of cooperatives is to develop an inclusive business model by adding more members to the cooperative. With more and more members joining in, the bargaining power of milk producers will increase, and that can suppress the high bargaining power of dairy processing companies. This can help resist the companies' policies that are sometimes unfair to farmers, such as the policy of at least ten days for payment for dairy products. The formula for increasing the inclusive farmer value chain is given below.

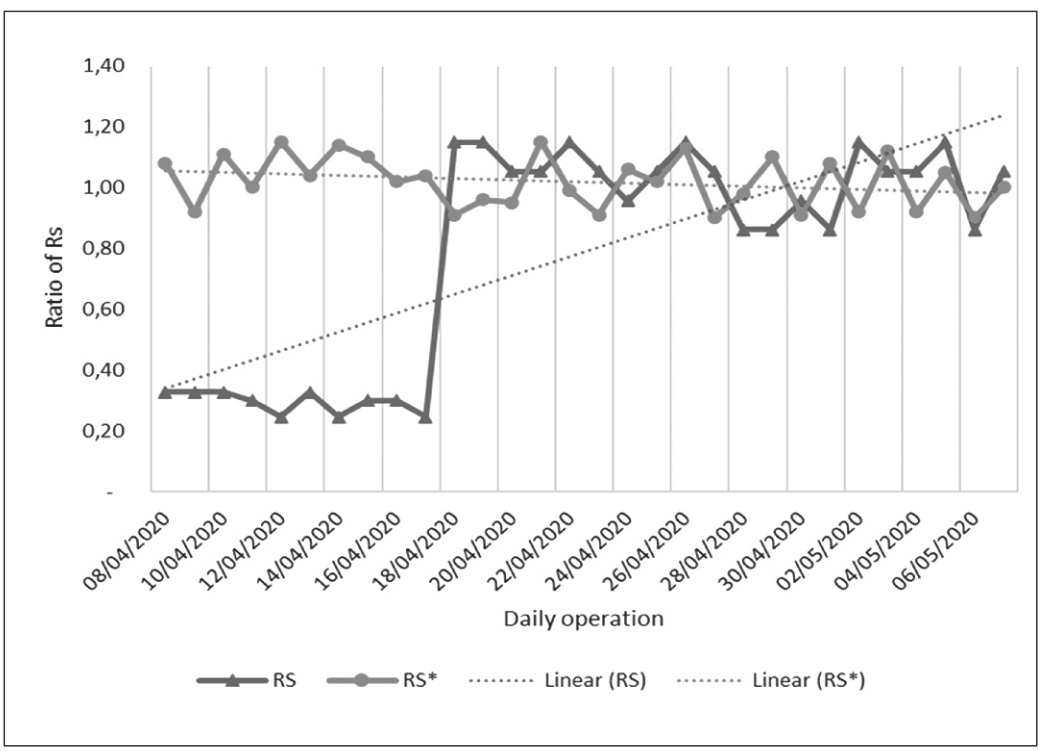

Figure 5. Economic Resilience on Daily Basis

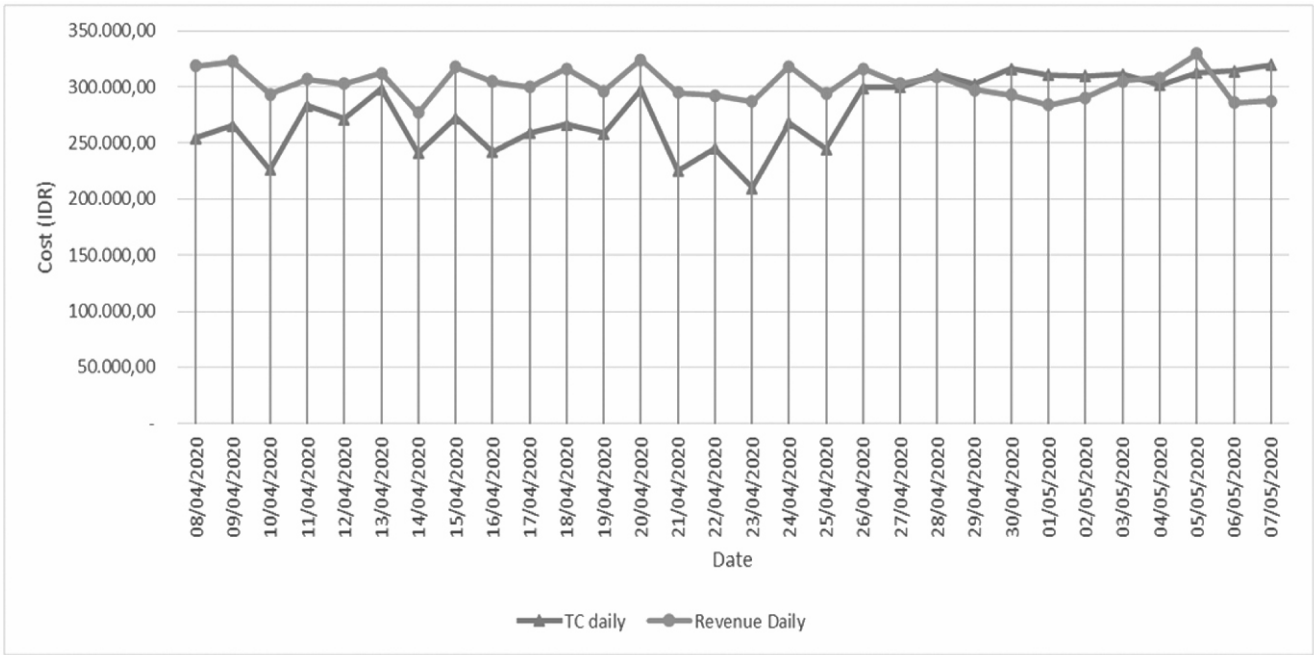

Figure 6. Daily Cost vs Daily Revenue Based on Rs*

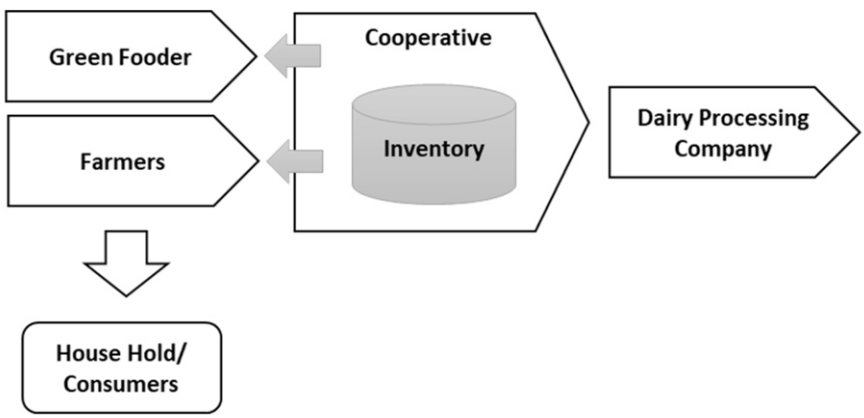

Figure 7. Supply Chain Recommendations

Table 1. The Proposed Improvement

Possible Areas of Improvements	
Weaknesses of current business model	**Improvements**
Green Fodder: Non-standardized product's quality Dynamic price and supply time	I_{CS} product needs to be supplied first by using a pull-up system. Cooperatives help to safeguard them in inventory as stock. At the same time, I_{GF} can be facilitated by Cooperatives. Cooperatives and residents can cultivate green fodders by collectively holding prime land for animal feed crops. Upon optimization of green fodder, the farmer will get daily income.
Farmers: (1) From the supply side, farmers will suffer from increasing supply costs since the price of green fodder varies at a low inventory management level. The quality of supply products is unstable. (2) Sometimes, because there is a shortage of milk tanks in the Cooperatives, the product is not taken by the milk processing company and has to be discarded. (3) Pricing is determined by the milk processing company. They give a payment term of 10 days.	Based on the new organizational strategy, the role of farmers is devoted to the production section with the supply of animal feed and livestock health obtained from the Cooperatives. There is a technical field team that constantly monitors farmer operations to ensure the quality of milk production.
Cooperatives: (1) Dairy tank is in shortage, needs to be upgraded. (2) Low power of bargaining position when dealing with pricing to dairy processing company.	• The cooperatives provide financial assistance upfront in the form of receivables for taking animal feed or medicine for operations for ten days. • The cooperatives work with farmers to make agricultural animal feed ingredients to maintain the quality and quantity of green fodder supply. • The role of cooperatives can be viewed as a platform for increasing technical production capabilities in collaboration with milk processing companies regularly. In addition, the cooperatives have to put in place a reward system tailored to the quality and accuracy of the farmer's production process to meet the targets set together with the milk processing company.

Table 1 suggests several recommendations for improvement, in which there is an explanation of the four roles of cooperatives as a bridge between suppliers and consumers for farmers. Finally, in a structured manner, the role of cooperatives can be shown in Figure 8.

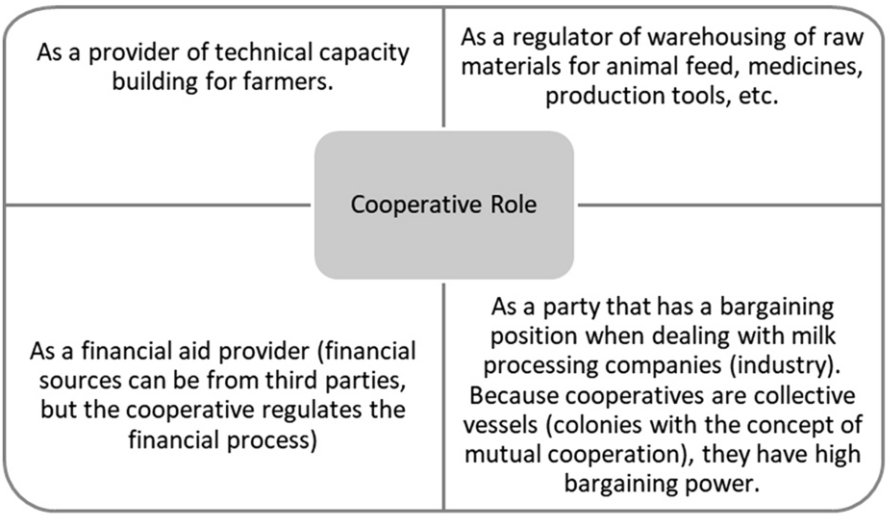

Figure 8. Strengthening the Role of Cooperatives

5. Conclusion and Recommendation

In order to meet the national milk supply target, it is not enough to be oriented solely to production without considering the economic resilience factor. The study explained this by placing mathematical modelling of economic resilience in a ratio between the purchasing ability of the farmers and the number of products that suppliers can supply. The pandemic has an impact that, in aggregate, is not too significant in the dairy industry compared to the industry in general, which is indicated by the stability of demand and supply, which is relatively stable. However, the government's periodic restrictions (physical distancing) is another challenge in the supply of goods, resulting in the scarcity of raw materials. In this research, it is shown that the role of cooperatives can be used to become a solution for the management of raw material supply and become a platform for farmers and dairy companies.

In this study, a value chain upgrade is created, initiated by creating economic resilience ratio then it is used as a reference for analyzing economic activity. It was found that the economic resilience of the farmer is stable, but in the initial 10-day period of dairy production, farmers suffer a ratio of an average of 0.4. This problem was resolved by creating a financing system that follows Equation 9-10 criteria. The proposed system is then strengthened by creating a support system by enhancing the role of a cooperative as a community-based institution established from a combination of dairy farming throughout the region (inclusiveness of the bottom-up pyramid-colony).

This research still requires various kinds of studies to enrich its knowledge. Because this research only focuses on the economic dimension (economic resilience), there are many aspects, such as the dimensions of the relationship between actors, the definition of an effective organization, and the development of other dairy product innovations. The political dimension related to public policy needs to be in the spotlight to enrich it in implementing the applied recommendations of this research.

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How Employees Raise Voice? A Model of Employee Voice Regulation

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Abstract

Drawing on regulatory focus theory, the purpose of the study is (a) to present a conceptual model integrating Employee Value Proposition (EVP), Psychological Contract and Employee Voice Behavior (b) to present propositions justifying the relationship between the variables, and (c) put forward a research agenda. A systematic integrative literature review of 57 studies was conducted. Based on the review, research gaps were identified in the theoretical perspectives, methodological aspects, and it was found that there is a paucity of research integrating EVP and other variables in a regulatory focus perspective. A bibliometric analysis using VOSviewer also supported the findings from the literature review. The link between Psychological Contract, Regulatory Focus, and Employee Voice Behaviour can be seen in earlier studies. The present study made an attempt to link Employee Value Proposition with these variables. The study also concluded with a future scope suggesting the need of strengthening the current theoretical foundation with empirical testing.

Keywords: *Employee Value Proposition, Psychological Contract, Employee Voice Behavior, Regulatory Focus Theory, Bibliometric Study*

1. Introduction

Human resources are considered as a key strength of an organization; every organization wants to attract a pool of talent (Alnıaçık & Alnıaçık, 2012; Santiago, 2019) and make all possible efforts to retain productive employees. On the other hand, an employee's belief about the value offerings by an organization, i.e., Employee Value Proposition (EVP), motivates an employee to fulfil individual obligations towards an organization; the individual obligations as an outcome of unwritten contract between the employee and the employer is called as a psychological contract. Therefore, EVP plays a key role in an employee's psychological contract fulfilment. Not only the belief of employees but also how an employee opens up and gives constructive voice to an organization plays a great role in the success of an organization. So, along with EVP, i.e., perception of employees, it is very important to understand how employees contribute to their role in the organisation's success by giving constructive voices from time to time.

The current study highlighted several limitations on existing knowledge in the domain of EVP, psychological contract, and voice behavior. Most of the studies in the area of psychological contract fulfilment and its outcome have taken Social Exchange Theory, Perceived Organizational Support Theory, and Socialization Theories as a theoretical foundation. Further, this study identified that very few studies considered regulatory focus theory as a theoretical foundation while integrating psychological contract and employee outcomes. The regulatory theory focuses on two self-regulatory orientations, i.e. promotion and prevention focus that directs an individual towards achievement of individual or organizational goals; existing studies also establish that regulatory focus directs behavioural outcomes at the workplace (Dai et al., 2020; Han & Hwang, 2019). Therefore, the present study has a higher significance as it highlights the theoretical application of regulatory focus theory. Further, there is a lack of research integrating these four concepts, i.e., EVP, Psychological Contract, Regulatory Focus, and Employee Voice Behavior, that motivates further study.

Hence an integrative literature review is carried out to understand the current state of knowledge. Based on the above limitations, the purpose is to present a conceptual model to integrate EVP, Psychological Contract, and Employee Voice Behavior and put forward a research agenda for future empirical testing. The present study contributes to the existing body of knowledge in many ways; first of all, the concept of EVP is emerging, and the present study highlighted the need of integrating EVP with other variables. Secondly, the present study identified some research gaps in psychological contract studies. Thirdly a conceptual model is proposed, and future research agenda is highlighted. Finally, the findings from the literature review are supported by a bibliometric analysis that gives a significant relationship among the variables.

The article structure is as follows. After the introduction, the first section includes the purpose statement and methodology of the study; the second section explains underlying concepts, i.e., EVP, psychological contract, regulatory focus theory, and employee voice behavior. Next, a conceptual framework is presented along with research questions and propositions. Finally, the last section contains conclusions of the review after the agenda for future research.

2. Purpose Statement

This study attempted to fill the research gaps identified by reviewing existing research on EVP, psychological contract, regulatory focus theory, and employee voice behavior while offering a conceptual framework and generating relationships between them to postulate research questions and underlying propositions. The primary research question guiding this article is: How EVP, psychological contract, and voice are related to each other in light of Regulatory Focus Theory? The hunt for literature and the resulting philosophical structure to answer the research question was motivated by two sub-questions: (a) which variable can be considered as a cause and which can be considered as an outcome? (b) which variable will act as a mediator or moderator? To address this question, this article looks at analytical and philosophical research to describe the interrelationship between the variables and how and where they can be placed in the model to justify their relationships.

3. Methodology

A systematic integrative literature review was conducted by adopting a set of steps given by Kitchenham (2004). Torraco (2005) structure was used to discover literature search that involves a series of tasks viz. a) where the studies were discovered, b) when the search was conducted, c) who did the search, how the studies were identified, e) how many hits of articles and the number of articles selected, and f) why these articles were selected (Callahan, 2010). The identification, screening, and selection of articles were conducted as per steps specified in Figure 1.

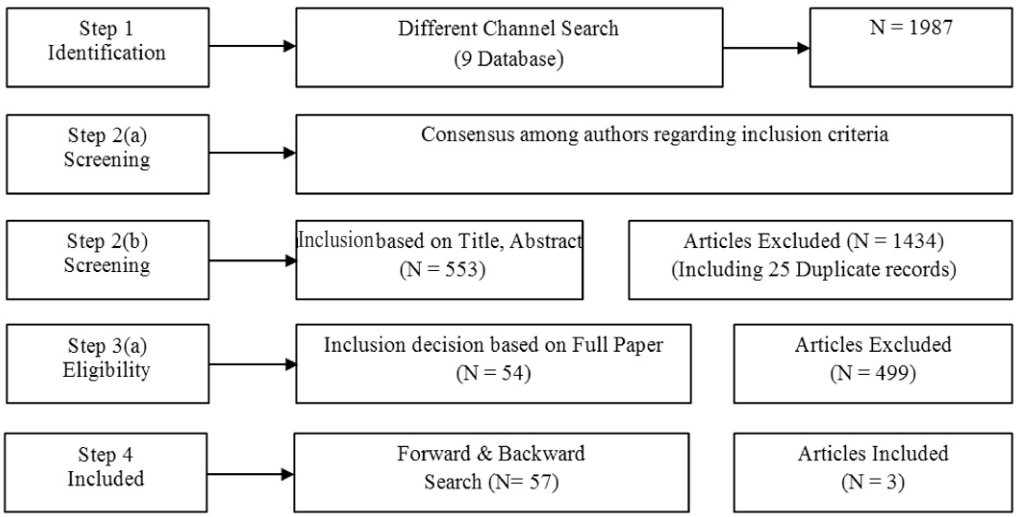

Figure 1. A PRISMA flow diagram (Liberati et al., 2009) displaying the results of the systematic literature search and indicating why records were excluded at each stage of the process.

Articles were searched using multiple databases viz. Inderscience, Springer, Wiley, Emerald, JSTOR, Taylor & Francis, Sage Journals, APA PsycInfo, and Elsevier. The initial search was conducted in April 2021, using the databases mentioned above. Based on the objectives, the search keywords determined were the combinations of (a) EVP (b) Psychological Contract (c) regulatory focus and (d) employee voice behavior. To make clear the scope of review, this study focused on the peer-reviewed articles published in the English language only; wherein any of the exact keywords appeared either in the abstract, title, or full paper. This study considered papers published between January 2011 and March 2021. In Step 1, the initial search was conducted using the keyword combinations that yielded a total of 1987 articles throughout the nine databases.

In the second step, consensus among the authors regarding the inclusion criteria and screening based on the title and abstract was done, and 1434 articles were excluded. Duplicated articles were also removed; for instance, a study by J. Liang et al. (2012) was found in both JSTOR and APA PsycInfo databases. The staged review was conducted, which is an approach to analyze the literature by first implementing an initial review of abstracts and then going on to an in-depth review of articles (Torraco, 2005) to assess the 553 searched articles by relevance to the current study purpose. In Step 3, the inclusion decision was made by going through the full papers (N=54). Further forward and backward search was also conducted, which helped to identify three more relevant articles; a total of 57 papers were finally selected for this study, as mentioned in Table 1 below.

Table 1. Number of articles searched from different databases

Sources of Database	Keyword	Title and Abstract	Full Paper	Final Papers Selected
Inderscience	28	10	0	0
Springer	105	35	1	1
Wiley	94	32	5	5
Emerald	168	56	36	38
JSTOR	382	110	3	3
Taylor & Francis	968	248	5	6
Sage Journal	78	26	2	2
APA PsycInfo	62	11	1	1
Elsevier	102	25	1	1
Total	1987	553	54	57

Based on the consensus of authors and to maintain the highest quality of work, the 57 articles considered for this study are taken from journals indexed in ABDC listing specifically of A*, A, and B category, as all these categories are considered as the first three highest quality category journals. The selection of articles is uneven from different databases; this is because some of the articles are available in more than one database; for instance, a study by Rai and Agarwal (2018a) is available in both Emerald and APA PsycInfo databases. In such a scenario, the first source was considered. The distribution of selected articles according to the journals and publisher with ABDC category are mentioned in Table 2.

Table 2: Distribution of articles from different journals

Name of Journal	Database	ABDC Category	No of Articles
Academy of Management Annals	Taylor & Francis	A	1
Academy of Management Journal	JSTOR	A*	2
Annual Review of Organizational Psychology and Organizational Behavior	APA PsycInfo	A*	1
Applied Psychology	Wiley	A	1
Asia Pacific Journal of Management	Springer	A	1
Business Ethics Quarterly	JSTOR	A	1
Career Development International	Emerald	B	2
Corporate Communications	Emerald	B	1
Employee Relations	Emerald	B	3
European Journal of Work and Organizational Psychology	Taylor & Francis	A	1
Human Relations	Sage Journal	A*	1
Human Resource Management	Wiley	A*	1
Human Resource Management Journal	Wiley	A	1
Industrial Marketing Management	Elsevier	A*	1
International Journal of Conflict Management	Emerald	A	1
International Journal of Contemporary Hospitality Management	Emerald	A	3
International Journal of Human Resource Management	Taylor & Francis	A	4
International Journal of Manpower	Emerald	A	3
International Journal of Organizational Analysis	Emerald	B	6
International Journal of Productivity and Performance Management	Emerald	B	2
Journal of Management	Sage Journal	A*	1
Journal of Management Studies	Wiley	A*	1
Journal of Managerial Psychology	Emerald	B	6
Journal of Organizational Behavior	Wiley	A*	1
Journal of Organizational Change Management	Emerald	B	1
Personnel Review	Emerald	A	10
		Total	**57**

Even though the concepts of 'psychological contract', 'regulatory focus', and 'employee voice' have their roots for a long period, the concept of EVP was first coined by DiVanna (2003). The concept of EVP as an employee-centered approach can be drawn from the definition given by Minchington (2005). Minchington defines EVP as "a set of associations and offerings provided by an organization in return for the skills, capabilities, and experiences an employee brings to the organization". Between 2005 and 2010, no articles were found for the variable EVP in the selected databases, so a literature search was conducted for the period January 2011 to March 2021 for the study as represented in Figure 2.

Further, a bibliometric analysis was conducted using VOSviewer 1.6.17 for visualizing and mapping the bibliographic data. VOSviewer is a reliable tool for bibliometric mapping (van Eck & Waltman, 2010) and enables the researchers to generate different maps viz. network, overlay, keyword density and cluster visualization. The objective behind conducting bibliometric analysis is to understand how the different variables are co-occurred in earlier studies and to support the gaps identified through literature review.

4. Theoretical Construct

4.1 Employee Value Propositions

EVP is a belief about the value offerings to the employees in an organization to compensate for the efforts made by an employee. EVP can be built inside an organization to use as a tool to attract talent as well as to retain existing employees. Defining the right set of EVPs can work like a magnet to attract a talent pool. EVP is considered a step towards a successful employer branding strategy. Employer branding is a set of efforts made by an employer to let the employees or potential employees be aware of the benefits or values offered by an organization.

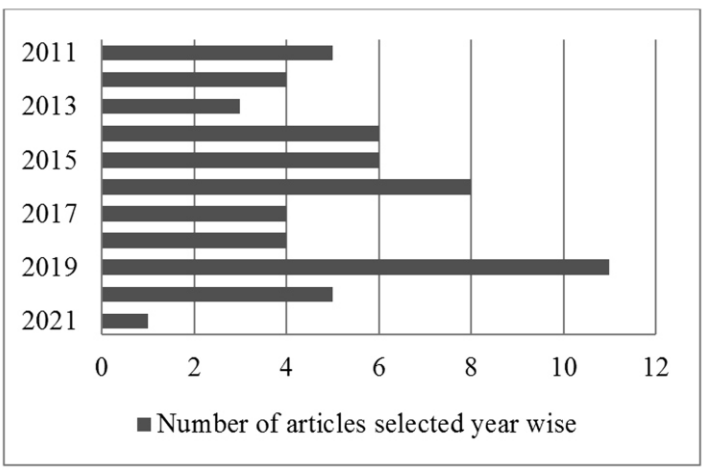

Figure 2. Number of articles selected year wise

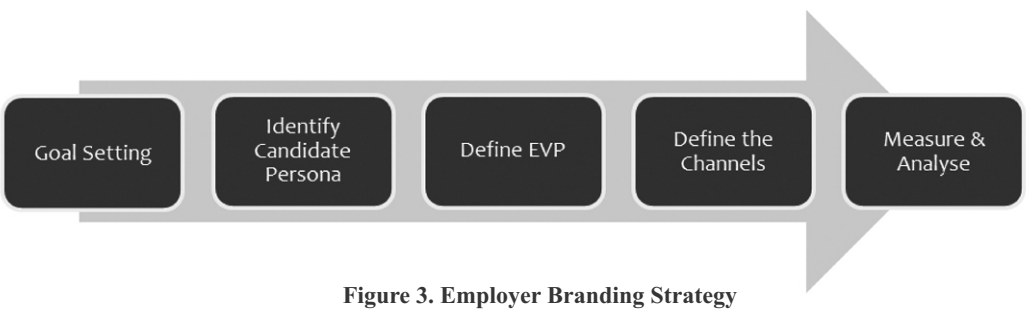

Figure 3. Employer Branding Strategy

As seen in Figure 3, employer branding creates EVP that meets employers' expectations and employees' wants (Mandhanya & Shah, 2010). The employer branding strategy involves a series of steps: Firstly, it starts with setting goals; e.g., attract more applicants, reduce the cost and time of recruitment, etc. Secondly, understand the characteristics of existing as well as potential employees. Thirdly, understand and write down the values or offerings your employees like. Fourthly, decide the touch-points; where you will promote your brand? Finally, periodic analysis of your strategy is to be done for its long-term effectiveness.

Employer branding represents the efforts made by an organization to penetrate the minds of employees about the benefits or value offerings. Employer branding is seen in the perspectives of employers, whereas EVP is a belief of the employees. The efforts made by an employer are useless till the time they are able to influence the employee's belief. Hence it is very important to study the concept of EVP from organizational perspectives. A considerable amount of research is available in the literature on employer branding (Chhabra & Sharma, 2014; Priyadarshi, 2011; Saini & Jawahar, 2019; Sivertzen et al., 2013; Tanwar & Kumar, 2019); whereas there is a paucity of literature on the concept of EVP. In other words, employer efforts were focused more, whereas the beneficiaries' or employees' perceptions were ignored. Berthon et al. (2005) identified five values that best describe the perceptions of employees about offerings by an employer, viz. economic, social, development, interest, and application values. Perceived Organizational Support, Exchange Quality, and Perceived Organizational Identity help improve employee perceptions of an organisation's value offerings (Rounak & Misra, 2020). Arasanmi and Krishna (2019) consider perceived organizational support and work environment as variables of EVP; based on the above discussion, Table 3 presents how EVP is considered with other relevant variables of this study in prior studies. The tabulated data indicates that studies on EVP were conducted earlier with psychological contract but not with other variables of our study.

4.2 Psychological Contract

Rousseau (1995) defines the psychological contract as "the terms of an exchange agreement between employees and employers". Both parties' beliefs, expectations, and values are the terms of a psychological contract (Smithson & Lewis, 2000). These expectations and beliefs create norms of

Table 3. Studies integrating employee perception of different values and other variables

Emerald	Melián-González, S. (2016)	Quantitative	Perception of opportunities at work is associated with Psychological Contract Fulfillment.	Employee Value Proposition, Psychological Contract
Emerald	Suazo, M. M., & Turnley, W. H. (2011)	Quantitative	Employees' perceptions on offerings by an organization is associated with Psychological contract fulfillment.	Employee Value Proposition, Psychological Contract
Emerald	Tanwar, K., & Kumar, A. (2019)	Quantitative	To be the employer of choice, an organization has to work on its value offerings.	Employee Value Proposition
JSTOR	Dulac, T., Coyle-Shapiro, J. A.-M., Henderson, D. J., & Wayne, S. J. (2017)	Quantitative	Perception of support at work is associated with psychological contract fulfillment.	Psychological Contract, Employee Value Proposition
T&F	Agarwal, U. A., & Bhargava, S. (2014)	Quantitative	Perception of support at work is associated with psychological contract fulfillment or breach.	Psychological Contract, Employee Value Proposition
Wiley	Gardner, D. G., Huang, G.-H., Niu, X., Pierce, J. L., & Lee, C. (2015)	Quantitative	Perception of opportunities at work has a link with Psychological Contract Fulfillment; an application of Self Regulatory Theory.	Psychological Contract, Regulatory Focus, Employee Value Proposition

reciprocity among employees and employers (Memon & Ghani, 2020). Based on the beliefs of employees, obligations may be long term or short term, which creates several psychological contract dimensions. As per D. M. Rousseau (2000), these dimensions are named relational, balanced, transactional, and transitional. The relational and balanced dimensions are long-term contracts, whereas the transactional and transitional contracts are short-term in nature. The relational contract is based on trust and emotional attachment (Bari & Fanchen, 2017); characterized by a long term employment guarantee followed by loyalty and commitment of the employee; it stresses on the interdependence of both parties on social ground. Wöcke & Sutherland (2008) suggest that balanced contracts are linked with the financial growth of an organization and are open-ended promises. Denise M. Rousseau and Greller (1994) advocate that in a balanced contract, there are career development opportunities for employees based on the economic growth of the organization. The other two contracts, i.e., transactional and transitional contracts, have a limited scope concerning the fulfilment of organizational goals. In transactional contracts, employees give more importance to individual interests and career development opportunities. Transitional exchanges are characterized by short term economic gains with minimum or no developmental aspects.

The fulfilment of a psychological contract promotes a positive environment within the organization. Hence the fulfilment of a psychological contract by both parties is equally important for the success of an organization. At the time of formation of the psychological contract, it is important for an employer that the promises are communicated clearly to avoid perceptual biases among the employees. On the other hand, the employee shall also seek clarification on all the queries that he/she has at the time of formation of a psychological contract. If these practices are ensured properly, future negative impacts on productivity can be reduced. Hence it is very important to understand how the fulfilment of a psychological contract impacts an employee outcome.

4.3 Employee Voice

Dyne et al., (2003) highlighted that employee voice could be referred to as both suggestions and concerns by employees in an organization. These concerns or suggestions for the management are not a tool for criticizing others (Van Dyne & LePine, 1998) but for the betterment of the organization. As per Morrison (2011), constructive voices are a source of innovation and learning to foster organizational change and to survive in the changing business scenario. These constructive voices may be promotive or prohibitive; promotive voice refers to suggestions by employees for the improvement of the organization, whereas prohibitive voice is characterized by concerns to prevent harmful or bad work practices (Lin & Johnson, 2014; Morrison, 2014). Some common features in both promotive and prohibitive voices are a) extra-role, i.e., employees play various job roles that are not a part of routine job roles, b) constructive, i.e., these voices are raised for the betterment of the organization and c) backed by a sense of responsibility (Liang et al., 2012). There are not only commonalities, but there are certain points of differences between these two kinds of employee voices (promotive and prohibitive): a) new idea for the betterment of organization versus concerns for existing organizational practices b) good intention behind suggestion for improvement versus good intention behind highlighting harmful activities, c) future orientation versus past or future orientation. In this study, employee voice is considered as an outcome of psychological contract fulfilment moderated by regulatory focus; Table 4 below presents some studies integrating the variables. The tabulated data below indicates that EVP is not considered with other variables in earlier studies.

Table 4. Studies integrating employee voice with other variables

Database	Author and Year	Method	Findings	Variables
Emerald	Ahmad, I., & Zafar, M. A. (2018)	Quantitative	Psychological Contract fulfilment is positively linked with constructive voice behavior.	Psychological Contract, Employee Voice Behavior
Emerald	Akhtar, M. N., Bal, M., & Long, L. (2016)	Quantitative	Psychological contract fulfilment mediates between the frequency of change and employee voice.	Psychological Contract, Employee Voice Behavior
Emerald	Ali Arain, G., Bukhari, S., Hameed, I., Lacaze, D. M., & Bukhari, Z. (2018)	Quantitative	Direct and indirect relationship exists between psychological contract and promotive or prohibitive voice.	Psychological Contract, Employee Voice Behavior
Emerald	Dai, Y. De, Zhuang, W. L., Yang, P. K., Wang, Y. J., & Huan, T. C. (2020)	Quantitative	Leader-member exchange moderate the relationship between regulatory foci and voice behavior	Regulatory Focus, Employee Voice Behavior
Emerald	Fu, C. Jung, & Cheng, C. I. (2014)	Quantitative	Psychological contract fulfilment is positively linked with promotive voice.	Psychological Contract, Employee Voice Behavior
Emerald	Han, M. C., & Hwang, P. C. (2019)	Quantitative	Regulatory focus moderate leadership support and employee voice.	Regulatory Focus, Employee Voice Behavior
Emerald	Rai, A., & Agarwal, U. A. (2019a)	Quantitative	Psychological contract mediates between workplace bullying and employee voice.	Psychological Contract, Employee Voice Behavior
Emerald	Rai, A., & Agarwal, U. A. (2019b)	Quantitative	Psychological contract mediates between interactional justice and employee voice.	Psychological Contract, Employee Voice Behavior
JSTOR	Liang, J., Farh, C. I. C., & Farh, J. L. (2012)	Quantitative	Psychological contract fulfilment is associated with promotive voice.	Psychological Contract, Employee Voice Behavior
JSTOR	Mitchell, J., & Neubert. (2013)	Quantitative	Regulatory focus moderate leadership support and employee voice.	Regulatory Focus, Employee Voice Behavior
Sage Journal	MacMillan, K., Hurst, C., Kelley, K., Howell, J., & Jung, Y. (2 020)	Quantitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Behavior
Springer	Liu, Y., Wang, W., Lu, H., & Yuan, P. (2021)	Quantitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Behavior
T&F	Balabanova, E., Ehrnrooth, M., Koveshnikov, A., & Efendiev, A. (2019)	Quantitative	Psychological contract breach is associated with exit and voice behavior.	Psychological Contract, Employee Voice Behavior
T&F	Liang, H. L. (2017)	Quantitative	Psychological contract enhances the association between promotion focus and voice	Regulatory Focus, Employee Voice Behavior, Psychological Contract
T&F	Ng, T. W. H., Feldman, D. C., & Butts, M. M. (2014)	Quantitative	Psychological contract breach is associated with an aggressive voice.	Psychological Contract, Employee Voice Behavior
Wiley	Kaine, S. (2012)	Qualitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Behavior

4.4 Regulatory Focus

Prof. E. Tory Higgins from Colombia University proposes the regulatory focus theory regarding individuals' perceptions while the decision-making process. He advocates that with mental techniques, an individual can direct his/her feelings, thoughts, and behavior for the achievement of goals. The regulatory focus theory by Higgins (1997, 1998) is based on the concept of self-regulation. According to the theory, people pursuing individual goals can be categorized in two ways based on their motivation towards achievement of goals; the motivation may be promotion or prevention focus (Lockwood et al., 2002). Furthermore, regulatory focus is found to be a key determinant to guide employee voice; for instance, regulatory focus shapes employee voice (Kaine, 2012), regulatory focus moderates the relationship between psychological capital and employee voice (Han & Hwang, 2019).

People with a promotion focus try to maximize positive results with rays of hopes and desires. They derive pleasure on the attainment of these hopes and desires; similarly, they experience pain if the hopes and desires are not fulfilled. Whereas people with a prevention focus try to minimize negative results, they consider obligations and responsibilities more important (Higgins, 1997). Hence, employees with a prevention focus like to invest their time in safe and reliable activities in the present scenario. For example, an employee with a prevention focus will advocate a reliable production process that is tested for its output, whereas an employee with a promotion focus will advocate a production process that can increase output in the future. Promotion focus promotes promotive voice, whereas prevention focus promotes prohibitive voice (MacMillan et al., 2020). Both promotion and prevention focus is equally important as one is concerned about growth and progress, whereas the other is talking about security and protection. As a strategic move, every organization must have hope and aspirations for the future, but also they have to comply with present responsibilities and obligations. Hence, both promotion and prevention focus regulation are important in an organization, and studying the impact of regulatory focus on employee outcome can greatly help organizational growth.

A study of existing literature found that regulatory focus theory is associated with psychological contract and voice behavior. EVP is the perception of employees about various benefits given to them to compensate for their efforts towards the organization. Previous studies associated the perception of employee benefits with regulatory focus; for example, Gardner et al. (2015) studied the perception of employment opportunities, self-esteem, and psychological contract in a self-regulatory theory perspective. Further regulatory focus theory helps in understanding how the fulfilment of psychological contract help in enhancing the self-esteem of employees (Gardner et al., 2015).

As the regulation focus approach is employed in this study and it has a link with all the variables, Table 5 below presents some studies integrating regulatory focus and other variables.

Table 5. Studies integrating regulatory focus and other variables

Database	Author and Year	Method	Findings	Variables
Emerald	Dai, Y. De, Zhuang, W. L., Yang, P. K., Wang, Y. J., & Huan, T. C. (2020)	Quantitative	Leader-member exchange moderate the relationship between regulatory foci and voice behavior	Regulatory Focus, Employee Voice Behavior
Emerald	Han, M. C., & Hwang, P. C. (2019)	Quantitative	Regulatory focus moderate leadership support and employee voice.	Regulatory Focus, Employee Voice Behavior
Wiley	Kaine, S. (2012)	Qualitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Behavior
T&F	Liang, H. L. (2017)	Quantitative	Psychological contract enhances the association between promotion focus and voice	Regulatory Focus, Employee Voice Behavior, Psychological Contract
Springer	Liu, Y., Wang, W., Lu, H., & Yuan, P. (2021)	Quantitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Be havior
Sage Journal	MacMillan, K., Hurst, C., Kelley, K., Howell, J., & Jung, Y. (2020)	Quantitative	Employee voice is directed by self-regulation.	Regulatory Focus, Employee Voice Behavior
JSTOR	Mitchell, J., & Neubert. (2013)	Quantitative	Regulatory focus moderate leadership support and employee voice.	Regulatory Focus, Employee Voice Behavior
Wiley	Gardner, D. G., Huang, G.-H., Niu, X., Pierce, J. L., & Lee, C. (2015)	Quantitative	Perception of opportunities at work has a link with Psychological Contract Fulfillment; an application of Self Regulatory Theory	Psychological Contract, Regulatory Focus, Employee Value Proposition

5. Research Gaps

In this section, research gaps are highlighted. The various research gaps identified are gaps in theoretical perspectives, methodological issues, and lack of research integrating EVP, Psychological Contract, Regulatory Focus, and Voice Behavior. Firstly, employee voice behaviour– an outcome of psychological contract fulfilment- is regulated by regulation focus (Dai et al., 2020), but there is a paucity of research applying regulatory focus theory in psychological contract studies, as seen in Table 6 below.

Table 6. Theories employed in Psychological Contract Studies

Studies	Method	Variables	Theory Used
Suazo, M. M., & Turnley, W. H. (2011)	Quantitative	Perceived Organizational Support, Psychological Contract, Individual Differences	Social Exchange Theory, Equity Theory
Sonnenberg, M., Koene, B., & Paauwe, J. (2011)	Quantitative	Psychological Contract, HRM Practices	Social Exchange Theory
Cohen, A. (2012)	Quantitative	Psychological Contract, Organizational Justice, Individual Values	Equity Theory
Fu, C. Jung, & Cheng, C. I. (2014)	Quantitative	Psychological Contract, Voice Behaviour, Exit, Neglect	Social Exchange Theory
Cassar, V., & Buttigieg, S. C. (2015)	Quantitative	Psychological Contract, Organizational justice, Emotional well-being	Organizational Justice Theory
Jabeen, F., Behery, M., & Elanain, H. A. (2015)	Quantitative	Transactional Leadership, Psychological Contract, Organizational Commitment	Social Exchange Theory
Arshad, R. (2016)	Quantitative	Psychological Contract, Turnover Intention, Cultural Orientation	Social Exchange Theory
Chambel, M. J., Lorente, L., Carvalho, V., & Martinez, I. M. (2016)	Quantitative	Psychological Contract Profiles, Employment Type	Social Exchange Theory
Peng, J. C., Jien, J. J., & Lin, J. (2016)	Quantitative	Procedural justice climate, Service Leadership, Psychological Contract, Employee Deviance	Social Learning Theory
Akhtar, M. N., Bal, M., & Long, L. (2016)	Quantitative	Psychological Contract, Voice Behaviour	Sense-Making Theory
Khoreva, V., & van Zalk, M. (2016)	Quantitative	Psychological Contract, Organizational Identification, Work Engagement	Social Exchange Theory
Melián-González, S. (2016)	Quantitative	Perceived Organizational Support, Perceived Supervisor Support, Job Satisfaction, Organizational Commitment, Psychological Contract	Social Exchange Theory, Perceived Organizational Support Theory
Luu, T. T. (2016)	Quantitative	Entrepreneurial Orientation, Psychological Contract, Knowledge Sharing	Theory of Reasoned Action, Field Theory
Kim, S. H., Laffranchini, G., Wagstaff, M. F., & Jeung, W. (2017)	Quantitative	Psychological Contract, Distributive justice, Commitment	Social Exchange Theory
Metz, I., Kulik, C. T., Cregan, C., & Brown, M. (2017)	Quantitative	Managers Personality, Psychological Contract	Personality Theory, Trait Activation Theory
Rai, A., & Agarwal, U. A. (2018a)	Quantitative	Psychological Contract, Workplace bullying, employee silence	Conservation Of Resources Theory
Rai, A., & Agarwal, U. A. (2018b)	Quantitative	Workplace bullying Intention to quit, Job satisfaction, Work engagement, Psychological Contract	Conservation Of Resources Theory
Ahmad, I., & Zafar, M. A. (2018)	Quantitative	Psychological Contract, Organizational Citizenship Behaviour, Perceived Organizational Support	Organizational Support Theory, Social Exchange Theory
Ali Arain, G., Bukhari, S., Hameed, I., Lacaze, D. M., & Bukhari, Z. (2018)	Quantitative	Psychological Contract, Voice Behaviour	Social Exchange Theory, Social Identity Theory and Psychological Contract Theory

Rai, A., & Agarwal, U. A. (2019a)	Quantitative	Psychological Contract, Voice Behaviour	Conservation Of Resources Theory
Pradhan, S., Srivastava, A., & Jena, L. K. (2019)	Quantitative	Psychological Contract, Abusive Supervision, Turnover Intention	Justice Theory, Role Theory, Conservation of Resource Theory
Santos, M. C., Coelho, F., Gomes, J. F. S., & Sousa, C. M. P. (2019)	Quantitative	Psychological Contract, Personal Values	Schwartz's Value Theory
Sheehan, C., Tham, T. L., Holland, P., & Cooper, B. (2019)	Quantitative	Psychological Contract, Employee Engagement, Turnover	Social Exchange Theory, Cognitive Dissonance Theory
Ahmad, I., Donia, M. B. L., Khan, A., & Waris, M. (2019)	Quantitative	Psychological Contract, Organizational Citizenship Behaviour, Creative Performance	Social Exchange Theory, Organizational Support Theory
Ekmekcioglu, E. B., & Aydogan, E. (2019)	Quantitative	Turnover Intention, Organizational Justice, Organizational Citizenship Behaviour, Organizational Identity	Social Exchange Theory, Social Identity Theory
Rai, A., & Agarwal, U. A. (2019b)	Quantitative	Psychological Contract, Voice Behaviour, Exit, Neglect	Social Exchange Theory, Social Identity Theory, Psychological Contract Theory
Rai, A., & Agarwal, U. A. (2020)	Quantitative	Psychological Contract, Justice perceptions, Workplace bullying, Power Distance Orientation	Fairness Heuristic Theory
Chang, P. C., Wu, T., & Du, J. (2020)	Quantitative	Psychological Contract, Antisocial behavior, Trust	Social Exchange Theory
Dulac, T., Coyle-Shapiro, J. A.-M., Henderson, D. J., & Wayne, S. J. (2017)	Quantitative	Perceived Organizational Support, Leader-Member Support, Psychological Contract, Trust, Commitment	Social Exchange Theory
Agarwal, U. A., & Bhargava, S. (2014)	Quantitative	Perceived Organizational Support, Leader-Member Exchange, Psychological Contract, Trust, Innovative Behavior, Commitment	Social Exchange Theory
Ng, T. W. H., Feldman, D. C., & Butts, M. M. (2014)	Quantitative	Psychological Contract, Voice Behaviour	Social Exchange Theory
Birtch, T. A., Chiang, F. F. T., & Van Esch, E. (2016)	Quantitative	Psychological Contract, Organizational Commitment, Job Demand	Social Exchange Theory
Liang, H. L. (2017)	Quantitative	Regulatory Focus, Voice Behaviour, Psychological Contract, Job Satisfaction	Regulatory Focus Theory, Self-Discrepancy Theory
Balabanova, E., Ehrnrooth, M., Koveshnikov, A., & Efendiev, A. (2019)	Quantitative	Psychological Contract, Voice Behaviour	Social Exchange Theory
Raja, U., Johns, G., & Bilgrami, S. (2011)	Quantitative	Psychological Contract, Job Satisfaction, Turnover Intention, Job performance	Social Exchange Theory, Organizational Support Theory
Bal, P. M., Kooij, D. T. A. M., & De Jong, S. B. (2013)	Quantitative	HRM Practices, Psychological Contract, Work Engagement, Commitment	Social Exchange Theory, Signaling Theory
Gardner, D. G., Huang, G.-H., Niu, X., Pierce, J. L., & Lee, C. (2015)	Quantitative	Employment Opportunity, Psychological Contract, Regulatory Focus	Regulatory Focus Theory

Secondly, it is found that these four variables viz. EVP, psychological contract, regulatory focus, and employee voice behavior are not taken together in earlier studies even though there exists scope for study. There exists a few studies integrating EVP and employee outcomes; for instance, Frank and Smith (2016) conducted a study in the area of talent management perspectives; Raj (2020) conducted in the context of employees turnover; Arasanmi and Krishna (2019) conducted in the context of employee commitment and organizational citizenship behavior. However, these studies neither covered employee voice as an outcome of EVP nor have they adopted a regulatory theory approach which is an important regulator of employee outcome.

Thirdly, most of the studies in the domain of psychological contract are cross-sectional (Ahmad & Zafar, 2018; Ahmad et al., 2019; Akhtar et al., 2016; Ali Arain et al., 2018; Cassar et al., 2017; Cassar & Buttigieg, 2015; Chambel et al., 2016; Chang et al., 2020; Chiang et al., 2013; Cohen, 2012; Ekmekcioglu & Aydogan, 2019; Flower et al., 2015; Fu & Cheng, 2014; George, 2015; Hornung & Glaser, 2010; Jain & Sullivan, 2019; Jha et al., 2019; Kasekende et al., 2015; Katou, 2015; Khoreva & van Zalk, 2016; Kim et al., 2017; Luu, 2016; Melián-González, 2016; Metz et al., 2017; Peng et al., 2016; Pradhan, Srivastava, & Mishra, 2019; Pradhan, Srivastava, & Jena, 2019; Rai & Agarwal, 2018a, 2018b, 2019a, 2019b, 2020; Rani et al., 2018; Rao & Kunja, 2019; S & M M, 2020; Saeed, 2020; Santos et al., 2019; Sheehan et al., 2019; Sonnenberg et al., 2011; Suazo & Turnley, 2010; Tornikoski, 2011; Tran Huy & Takahashi, 2018; van der Smissen et al., 2013). Only a few studies adopted longitudinal methods (Freese et al., 2011; Jabeen et al., 2015; Arshad, 2016; Schreuder et al., 2017) and the same in the context of voice behaviour studies too (Raj, 2020a; Hussain, 2020; Memon & Ghani, 2020; Shafqat & Mushtaq, 2021). The concept of psychological contract is dynamic, and longitudinal design is suggested (Shafqat & Mushtaq, 2021). Further, most of the studies are quantitative, and the qualitative approach is ignored.

5. Bibliometric Analysis

With the help of VOSviewer, the co-occurrence of keywords was constructed and presented through the network, overlay, density, and cluster visualization. In-network visualization, the keywords are represented based on their weights in circles; the bigger the circle higher is the weight of the keyword, as represented in Figure 4. The thickness of the line between two keywords shows the strength of association between them.

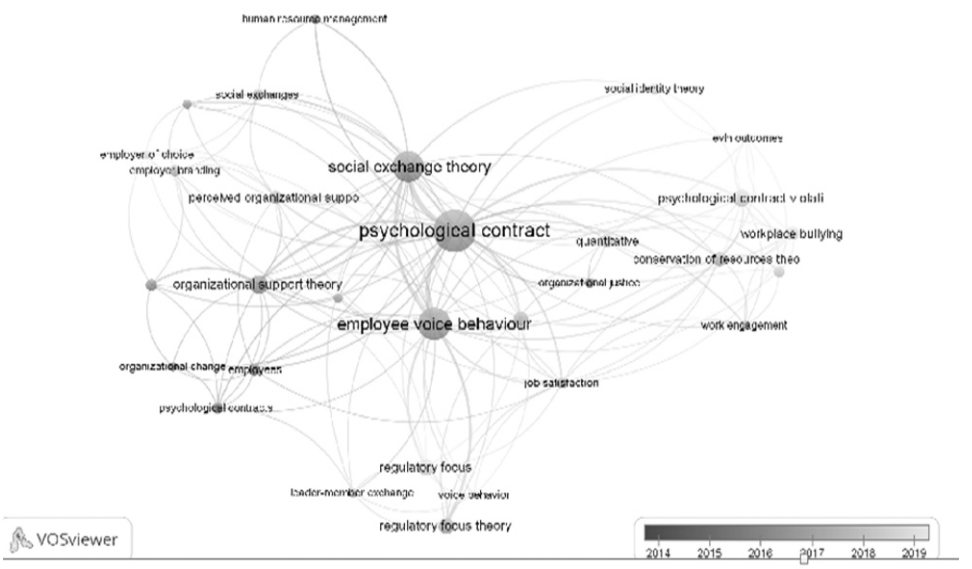

Figure 4. Network Visualization of Keywords

In overlay visualization, the keywords are coloured differently from blue (lowest score), green to yellow (highest score), as represented in Figure 5. The colour of keywords in the map represents the average year wherein it appears. In density visualization, the software enables the researcher to visualize keyword density (as in Figure 6) and cluster density (as in Figure 7). The keyword density highlights the strengths of keywords in the documents. The cluster density highlights association of different keywords by creating clusters of interrelated keywords. A list of keywords with minimum co-occurrence of 3 and more in the selected articles is presented in Table 7, extracted from VOSviewer software.

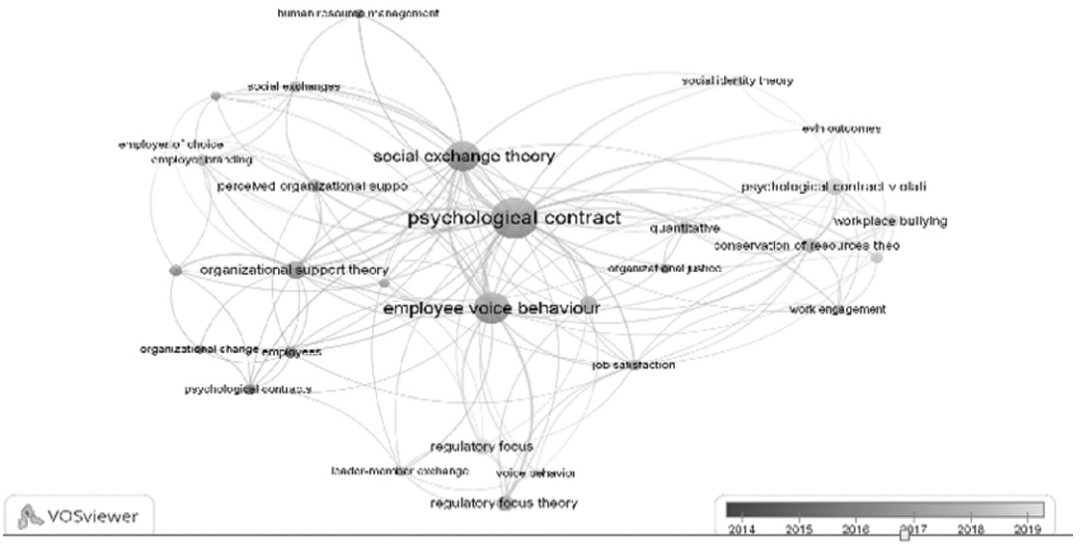

Figure 5. Overlay Visualization of Keywords

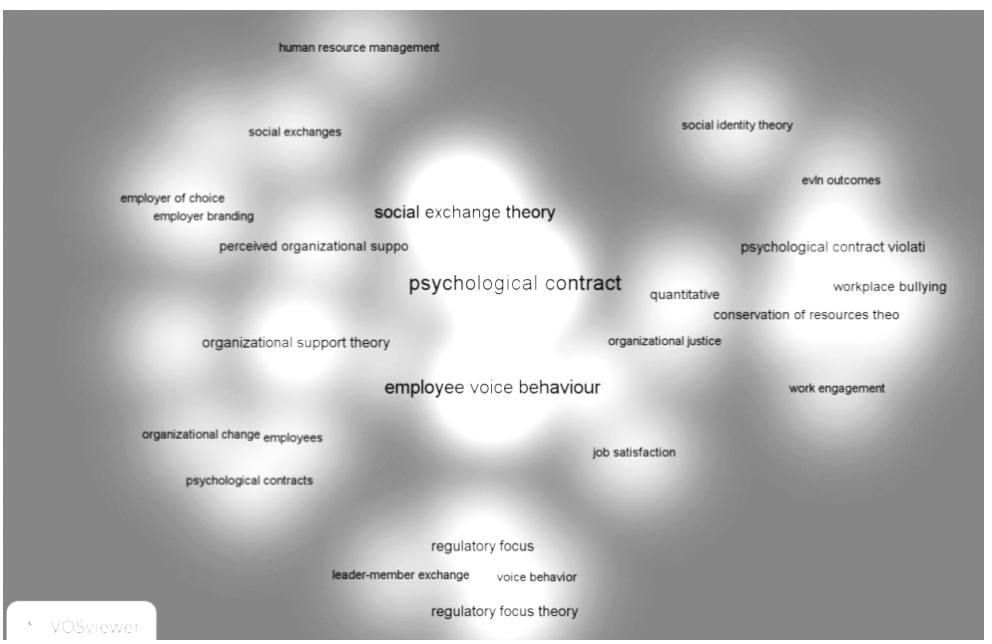

Figure 6. Keyword Density

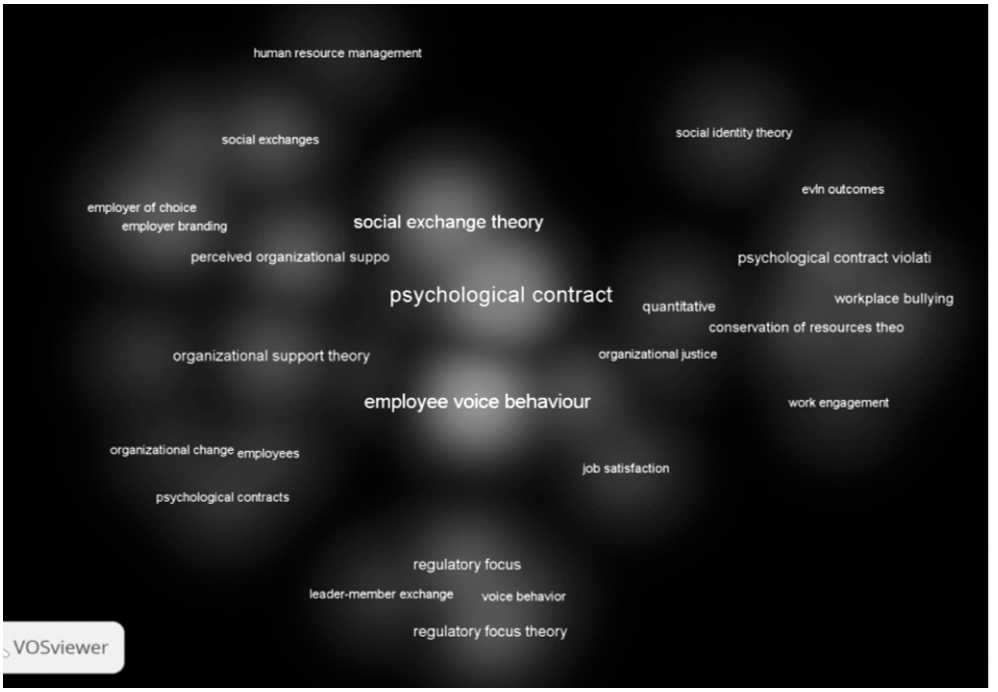

Figure 7. Cluster Density

The cluster density indicates that psychological contract has occurred most of the time with social exchange theory and organizational support theory, and these three keywords are in the same cluster. Whereas employee voice behaviour occurred more often with regulatory focus theory, and both the keywords are in a different cluster. It supportsthe earlier claims derived from the literature review as the employee voice behaviour – an outcome of psychological contract fulfilment is regulated by regulation focus (Dai et al., 2020), but there is a paucity of research applying regulatory focus theory in studying outcomes of psychological contract studies. All the visualization maps indicate that the terms psychological contract, regulatory focus, and employee voice behavior occurred many times in the literature, whereas employee value proposition is ignored.

In this section, various research gaps in the fronts EVP, psychological contract, and employee voice behavior research are discussed. Taking note of these gaps, a conceptual model is developed for further research and presented in the next section.

7. Conceptual Framework

The study's objective is to present a conceptual model to integrate EVP, Psychological Contract, and Employee Voice Behavior in the light of Regulatory Focus generating interrelationships between the variables to propose research questions and their underlying propositions and research agenda. To meet this objective, a conceptual model is developed (Figure 8), as discussed in this section.

Based on the extensive literature review of the identified articles, two relevant research questions arise based on the interrelationships generated between the variables as mentioned below:

Research Question 1: Does psychological contract fulfilment mediate the relationship between EVP and employee voice behaviour?

Research Question 2: Does regulatory focus moderate the relationship between psychological contract fulfilment and employee voice behaviour?

Based on the two research questions, four research propositions were made that guide researchers to test the framework in future studies.

EVP represents perceptions of employees – a set of offerings to attract a pool of talent or to motivate existing employees. It represents a combination of values that makes an organization the best place to work. Employee's intention to stay or quit depends on a series of mental exercises, viz. thinking, planning, and taking appropriate action; employee perceptions of value offerings influence that. At times,

Table 7. Keywords with co -occurrence and their link strengths

Keyword	Occurrences	Link strength
Psychological contract	41	72
Employee voice behaviour	25	47
Social exchange theory	23	45
Organizational support theory	8	21
Psychological contract violation	7	14
Regulatory focus	6	13
Regulatory focus theory	6	12
Conservation of resources theory	5	10
Psychological contract breach	5	13
Perceived organizational support	4	14
Employee value proposition	3	7
Psychological contracts	3	6
Social exchanges	3	8
Social identity theory	3	8

employees' perceptions of value offerings are unwritten or a part of a psychological contract (Patrick & Raghu, 2014). Hence the proposition:

P1: *EVP will have a positive impact on psychological contract fulfilment.*

Research suggests the role of the psychological contract on employee outcomes (Dulac et al., 2017). Also, employee perceptions of value offerings impact psychological contracts (Patrick & Raghu, 2014). Exploring voice literature suggests that fulfilment of values/benefits is reflected in the form of considerate voice (Vantilborgh, 2015); on the other hand, if the values are not fulfilled, employees reciprocate through withdrawn voice (Ng & Feldman, 2012). Hence the next proposition is:

P2: *The psychological contract will mediate the relationship between EVP and voice behaviour.*

A progressive organization that always motivates its employees to open up with their positive views (i.e., promotive voice) as well as to share their concerns (i.e., prohibitive voice) to prevent harmful activities in an organization (Lin & Johnson, 2014). Promotive voice is associated with promotive focus, whereas prohibitive voice can be an outcome of prevention focus (Lin & Johnson, 2014). The psychological contract has implications for employee outcomes (Agarwal & Bhargava, 2014; Bhatnagar & Biswas, 2012; Birtch et al., 2016; Hartmann & Rutherford, 2015; Raja et al., 2011). There exists a positive relationship between psychological contract fulfilment and promotive voice, whereas there exists a negative relationship between psychological contract breach or violation and promotive voice (Memon & Ghani, 2020). Hence, propositions 3 and 4 are as below:

P3: *Promotion focus will moderate the relationship between psychological contract and promotive voice so that the prohibitive voice is weaker when promotion focus is higher.*

P4: *Prevention focus will moderate the relationship between psychological contract and prohibitive voice so that the promotive voice is weaker when prevention focus is higher.*

Hence, this study presents a conceptual model with defined research questions and propositions that can be empirically tested in future studies to fill the identified gaps. The next section will discuss the future research agendas.

8. Future Research Agenda

This study identified four significant research gaps and presented a conceptual model for further empirical testing.

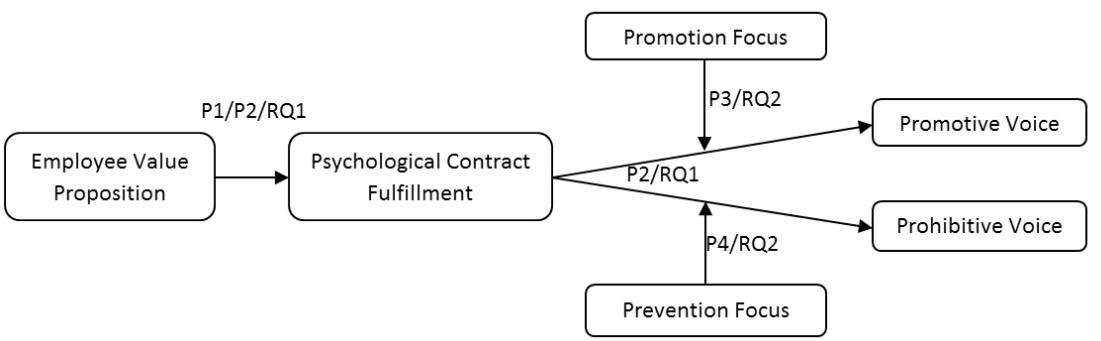

Figure 8. Model of Employee Voice Regulation

Based on the identified research gaps, some future research agendas are suggested. Future research shall be done to answer the two broad research questions identified in this study, i.e., a) Does psychological contract fulfilment mediate the relationship between EVP and employee voice behaviour? b) Does regulatory focus moderate the relationship between psychological contract fulfilment and employee voice behaviour? So, first of all, the role of regulatory focus theory needs to be studied.

Secondly, in the last decade, the concept of EVP has been under-researched in the Indian context. For instance, studies were identified in other settings like Frank and Smith (2016) conducted a study in an American setting; Arasanmi and Krishna (2019) conducted a study in New Zealand, but only one study integrating EVP and employee outcome was found in an Indian setting. Raj (2020) correlated EVP and employee turnover in the Indian IT sector, so there is a need for further research in the Indian context integrating employee behavioral outcomes like employee voice behavior.

Thirdly, most of the studies in the domain of psychological contracts are cross-sectional, and the dynamic natures of psychological contracts warrant longitudinal study. To summarize, there is a need of strengthening the theoretical foundation presented in this study. Empirical testing integrating EVP, psychological contract, regulatory focus, and employee voice behavior needs to be done. The appropriate measurement scales shall be identified, and longitudinal studies in different time frames shall be done.

9. Conclusion

In this study, EVP, Psychological Contract, and Employee Voice Behavior are integrated (a) to present a conceptual model, (b) presenting propositions justifying the relationship between the factors, and (c) putting forward a research agenda. The regulatory focus theory perspective is employed because individual differences influence employee voice, and it is already established by earlier studies (Liang et al., 2012). A systematic integrative review was conducted by adopting the steps given by Kitchenham (2004). Relevant literature was identified using Torraco's (2005) structure; considering the recent development of EVP in the last decade, literature after 2010 was included for the study. The findings from the literature review are supported by bibliometric analysis. Some research gaps are discussed, and a conceptual model of employee voice regulation is presented. Finally, the study suggests several future research agendas and recommended a need for future empirical testing of the theoretical framework. It is anticipated that the current integrative review will be helpful for further research, and the outcome of the same can be employed to understand the complex organizational dynamics.

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