JME JOURNAL OF MANAGEMENT AND ENTREPRENEURSHIP

Volume 17, Number 4, October - December 2023 ISSN: 2229-5348

ज्ञान-विज्ञान विमुक्तये
University Grants Commission
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XAVIER INSTITUTE OF MANAGEMENT & ENTREPRENEURSHIP

JOURNAL OF MANAGEMENT AND ENTREPRENEURSHIP

Quarterly **Volume 17, Number 4** **October - December 2023**

EDITORIAL & ADMINISTRATIVE ADDRESS

Journal of Management & Entrepreneurship
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Journal of Management & Entrepreneurship

(JME has been included in the UGC CARE list)

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Innovative Management[1]

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Introduction

ABSTRACT

The only business of management is making things happen. The keywords in management are effectiveness and results. The well-known elements of the management process, viz. planning, organising, directing, motivating, coordinating, and controlling, have one common and overriding aim: to make things happen to achieve results. A manager who fails on this score is a mere caretaker. Such people are usually busy doing things 'right' rather than doing the right things. The major causality in this type of management is the organisation itself, with caretakers ultimately turning out to be undertakers of the organisation. Unfortunately, we have plenty of such caretakers around. It is about such people that Reddin said, "In every firm, some managers could be retired at full salary, and profits would go up".

[1] This Article was originally Published in SAIL Journal "Growth" Vol. 2, Issue 3. in April 1974. Article reproduced with the author's permission in view of its continuing relevance to present day Innovation Eco System in Corporate India.

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Introduction

The only business of management is making things happen. The keywords in management are effectiveness and results. The well-known elements of the management process, viz. planning, organising, directing, motivating, coordinating, and controlling, have one common and overriding aim: to make things happen to achieve results. A manager who fails on this score is a mere caretaker. Such people are usually busy doing things 'right' rather than doing the right things. The major causality in this type of management is the organisation itself, with caretakers ultimately turning out to be undertakers of the organisation. Unfortunately, we have plenty of such caretakers around. It is about such people that Reddin said, "In every firm, some managers could be retired at full salary, and profits would go up".

The Builder

Drucker divides managers into two broad categories-caretakers and builders. Caretakers barely manage to keep the organisation alive in the short run. It is very close to a mere cob-web management. On the contrary, the builder takes the organisation to newer heights and places. He has a hunger to achieve, to build and to create. What guides him often in his executive life is what can be termed as a "creative restlessness." He is an ardent believer in that excellent guiding principle of Philip Selznick: "The better we do, the more is expected of us."

The usual rule of thumb in organisations is that every builder has three caretakers. In the Indian situation, perhaps the ratio could be put as 1: 3: 1, where the last figure in the ratio indicates the position of undertakers.

Managerial Heartland

Innovation or creativity is the heartland of management. Devoid of this, management is simply a flat tube. It is an innovation which activates and fires the whole process of management. Take any successful management practice, and there would be what we could term result-oriented innovative management - a hunger to achieve and improve. We could call it a continuous search for excellence. Take out this hunger to excel; we are left with sterile and barren management.

Let us Look Around

- Organisations and the country are now beset with several stubborn problems, the type of which we are not very much used to. As days go by, they are becoming more and more intractable. For example:
- Employee alienation in organisations. This is now rapidly spreading to the officer class as well, resulting in a considerable number of lost souls in organisations. How do we win back these lost souls?
- Problem of indiscipline. This is a malignant cancer which is eating away the vitals of many organisations. This seems to have become particularly acute in public sector organisations.
- Increasing intensity of multi-union rivalry where unions compete to outbid each other, and the organisations are held as helpless hostages.
- The new phenomenon of officers' associations and craft unions, and the restlessness and the militancy that are now spreading among them.
- The new wave of strikes, including the innumerable wild cat strikes, have happened in several essential services, including Railways, electricity and water supply.
- The rising tide of student power and unrest.
- The steadily deteriorating educational standards.
- The skyrocketing expectations and the run-away inflation.
- The gap between what is demanded from organisations and what is given in return is widening.
- The increasingly difficult foreign exchange situation of the country.
- The near stagnation in industrial growth. Examples could be multiplied, but I have no doubt in my mind that there would be near unanimity on the point that we are in a hell of a mess, which calls for bold new experiments and answers.

What is Innovation?

Robert Mueller views innovation as "a deliberate, novel, specific change aimed at accomplishing the system's goals more effectively. The seminal aspect of innovations, therefore, is useful change". To Webster, "Innovation is the introduction of something new or something which differs from existing forms, and it occurs as a result of the initiative." According to Joseph Mason, "new and beneficial ideas put into action" is creativity. Using this as the basis, we could put together some key elements of innovation or creativity. They are:

- a new and beneficial idea
- such ideas generated through the initiative
- idea implemented (not just talked about)
- such implementation resulting in change and benefit
- increased organizational effectiveness

Idea generation alone is not innovation. Then, in that case, we do much innovation in classrooms. The crucial test in innovation is implementing the idea, resulting in change and benefit. Creativity or innovation need not be invention. It could be a synthesis of two existing ideas or a modified version of an existing idea. Transference of an idea or practice from one situation to another with benefit would also be a clear case of innovation. Innovation can be something other than a million-rupee business. It could vary from as simple a project as a new layout in a small branch office to a new military strategy which won the Bangladesh war, or for that matter, it could vary from a totally new way of handling a habitual latecomer in an office to a complex situation such as the handling of the last Indian Airlines strike. Again, innovation is not just for the chief executive officer; it should and must be practised by every executive and every employee in the organization. Then we have a gung-ho organization that will win and whose every employee becomes a winner.

By Way of Illustration

To illustrate what we mean by innovation, let us take a few examples.

- Annadurai's slogan, "a measure of rice for a rupee" (which he implemented later in Madras), was one of the key reasons for DMK's success in Tamil Nadu.
- The 'Garibi Hatao' slogan was also powerful, although it did not completely succeed at the implementation stage.
- The Joint Negotiating Committee of the Steel Industry is a unique and successful experiment in India.
- The multi-union bargaining which Indian Aluminium successfully tried at a number of its units.
- Production target setting at the Rourkela Steel Plant with and through worker participation.
- The new flexitime experiment was successfully practised in several industrial and commercial organizations in Germany and a few other European countries.
- TISCO's policy of housing plots allotment to employees as well as giving employment to a dependent of the retired employee. Lately, TISCO has also offered its retired employees free medical care. These are some of the practices which have won for TISCO the commitment of its employees.
- The pioneering and fantastically successful mail order business of Sears Roebuck of America.
- India Tobacco's famous advertisement "Calcutta is forever, and we are committed to Calcutta". This was at a time when industries were fleeing away from Calcutta.
- The beauty contests of Femina, etc., as a novel promotion device.
- Maharishi Mahesh Yogi taking his transcendental meditation to the executive suites in the West.
- The imaginative 'one lakh housing plan' of the Kerala Government is based on a unique fundraising plan.
- The Datamatics Corporation utilizing as a business opportunity the great rush of young Indian Engineers to the U.S. four to five years ago. Examples could be multiplied. However, what we see in any such example

is the operation of a rowing eye looking for opportunities to seize and to exploit. It is vital to note that contentment is the greatest enemy of innovation.

Is Creativity for Everyone?

Sure enough, it is for everyone. There are no haves and have-nots here. There is nothing like a class of born innovators while others are condemned to be third-rate caretakers. But then, innovation does not come up unless one wants it, looks for it, and pays the price. Deliberate creativity is possible, and anyone who has the will can develop it. The key word here is the will. In this context, perhaps it would be a good idea to raise in ourselves a few pertinent questions, such as:

* Do I have the fire and the thirst inside to constantly look for areas to improve my performance level?
* Do I question how I do things, a sort of continuous questioning to open up blind spots and kill the fat hobby horses, if necessary?
* Have I identified the key result areas of my job? Sorting out the vital from the trivial.
* Am I a power-monger or a result-seeker, a tough-minded result-seeker?
* Do I have a fairly high tolerance level for frustration, or do I give up at the first sign of trouble or defeat?
* Can I put up with long hours and hard work?
* Lastly, do I have a constancy of purpose instead of shifting the ground every third day?

These are difficult questions to answer. And, if and when we honestly answer, we may not always be too happy with our answers. But then, by raising these questions, we have taken the most difficult first step on the innovative road. Several studies in the West have proved beyond doubt that deliberate creativity is possible. But such studies have also proved that this happens only when a person has:

* the hunger to achieve
* the willingness to put in continuous effort
* the necessary knowledge and skill
* self-confidence through inner strength and past success

A Climate for Creativity

Creativity does not blossom in a dry and oppressive climate. It can only come up in an open, trusting, helping and demanding climate. It is necessary on the part of every manager to establish such a climate where creative thinking and creative activity will take place on a continuing basis. A manager must keep asking himself how free the atmosphere is in his organization. Creative thinking will not automatically happen. Managers should inspire it to happen. Thomas J. Watson of I.B.M. once said, "It is management's function to nurture, identify, rate and reward creativity." The spirit and the will to create is a rare and precious quality. Once identified, it must be cherished and nourished. Innovation can flourish only in an organizational climate of free thought and expression. A lot of this depends on the man on the spot - the top man of the department, division or the organization. Mark this: the internal climate of an organization depends more on the top team than the environment.

To be Innovative

What makes a person innovative? Is it his family, the school where he studied, the environment, or what? Of course, nobody can deny the importance of the above in making or breaking a person, but most of the key qualities that go into creating a creative person are acquired, developed and built up. That is why we said earlier that deliberate creativity is possible. But then it depends on a number of key qualities such as:

1. Inner Drive: This is the first in the order. All others follow. It is this drive which distinguishes the builder from the caretaker- the drive to push on, the drive to make things happen, the drive to be effective and the drive to succeed. It is a sort of fire which does not normally die in this man's mind. It prods him on and on, and he moves on.

2. Result Orientation: A mere drive without result orientation could take the person in the wrong direction. Or he may succeed at the expense of the organization, what Reddin calls 'personal effectiveness', a sort of pyramid climber. An innovator's motto is to succeed with the organization, not at its expense. He fixes his eyes on demanding objectives aligned to the organizational objectives. It is this result orientation which distinguishes him

from the species of power grabbers who simply hoard power to prevent others from succeeding.

3. Persistence: Giving up at the first sign of trouble is the sign of a weakling. Our friend, the innovator, doesn't give up things that fast and easily. He keeps fighting. In adversities, he comes back with renewed vigour to pursue his predetermined objective with tenacity and fury. This is tough-mindedness in action.

4. Interpersonal competence: The ability to get along with people, whether as boss, peer, or subordinate. In the absence of this, the manager is sunk. Either he becomes a hopeless autocrat or an escapist. The ability to respect, regard and value others is crucial for success.

5. Flexibility: This is the ability and the knack to change pace, to roll with the punches, or even to lie low in certain situations. There is no point in foolishly sticking to one's position or point of view against overwhelming odds. Instead of getting into a head-on collision, one should attempt other methods. Here is where judgment and flexibility should be used. Likewise, when proved wrong, he gladly corrects his position.

6. Creativity: This is the drive to create and to build. It is built on what we termed the 'creative restlessness' - a constant and continuing drive to do better and to excel. His guiding philosophy is that anything that he did earlier can be done better when he comes next to doing it.

A person who cannot escape the beaten track must remain a caretaker and a follower. The ability to think up and develop new ideas and ways of handling problems makes the innovator what he is. That is what puts him ahead of the crowd.

7. Integrity: Sacrificing integrity is unnecessary to achieve and succeed. One has to succeed with integrity, and only such success will be durable. The common belief that one has to compromise integrity to succeed is an inexcusable fallacy. This flows from tendermindedness and lack of purpose. The truly innovative man upholds his integrity. He wins with honour and integrity. Unfortunately, in Indian business circles, integrity has become a casualty in the pursuit of wealth and glory. This only indicates small-mindedness and short-sightedness.

A recent study reported in Business Horizons deals with contributive and causative factors in success. According to the study, the ten key factors in the attainment of success are:

1. Intelligence - Having one or more abilities of mental acuity, reasoning, comprehension, and common sense.
2. Verbalization Skills - The ability to effectively express and convey true meaning.
3. Integrity - Having high religious, ethical, or moral values and honesty.
4. Self-concept - Having belief in self and acceptance of self; may include freedom from shame and anxiety and non-defensive attitudes.
5. Leadership ability- Having the ability to get things done through others; may include team building and charismatic qualities; may include the ability to work with people.
6. Adaptability - Adapting to changing conditions and requirements, adapting to or coping with adversity, may include continuous pursuit of knowledge, skill attainment, and progressiveness.
7. Aspirations - Having the desire to achieve; ambitious; aspiring to raise oneself above others or to acquire wealth or personal gain.
8. Drive - Having determination, persistence, diligence, work-oriented, and hard work.
9. Commitment - Having the characteristic of setting goals; may include risk taking, pledging self to objectives and goals of firm, pledging self to help others.
10. Accidental factors - Good health, good luck, being at the right place at the right time, being with a growth-oriented firm, help from others, educational background, social background, family background, father's influence, inheritance, opportunistic, appropriate, or favourable circumstances.

Barriers to Innovation

Why are all people not innovative? Why do quite a number of organizations plod along? In other words, what comes in the way of innovation and success?

To my mind, there are three important inhibitors to innovation.

They are:

* Contentment
* Conformity
* Habit

Contentment: The moment one is contented with what he is, where he is, and how he performs, he hits the pit's bottom. He slowly becomes an onlooker, and his mind often goes to sleep while wide awake. In that process, the organization has added to its deadwood heap. Contentment numbs the mind and snaps initiative.

Conformity: Here is one who keeps to the middle of the chartered path. Every procedure, rule and practice is religiously and scrupulously followed. Any new idea is pooh-poohed and given a cold shower. The stock advice of "this is not according to the company policy" or "audit will object" is given to the little enthusiast who wants to stir up something.

Our good friend conformist will gratuitously give any number of sermons to the "erring juniors' and drive home the point on the importance of living by and for the rules, procedures and past practices.

Risk-taking is abhorred and positively discouraged. No one can ever catch our conformist for any mistake. He will satisfy every full stop and comma in the procedure. All precedents will be carefully examined and relied on. Such an Organization becomes a peaceful place to work. Perhaps a little too peaceful- and our good friend conformist will never develop an ulcer or cardiac conditions. But unfortunately, the organization develops arteriosclerosis and gets an early burial.

Habit: Here is one who is a prisoner of his past practices, thinking and actions. He is in a deep habit groove and is happy with where he is. He may not be aware that habit has taken over his whole thinking process. There are ready-made answers for everything. For everything that goes wrong, there is someone else to blame. He doesn't strain his mind. Why should he? The status quo gives him pleasure and security. He has blinkers on, but he doesn't know. He scrupulously follows a strict routine and literally follows that old advice," early to bed and early to rise ". When it comes to attending office, his practice is to "return early and reach late".

No Short Cut

For achievement and success, there is no shortcut. Likewise, innovation doesn't bless those who do not seek it. A commitment to objectives and devotion to work takes a person to success, and the will to excel makes a person innovative. The price that one has to pay for this is very heavy indeed. "Long hours, hard work, and mankilling travel schedules are the way of life for him. He concentrates on his job with a fury and singleness of purposes that reduces other things to a lesser role. This doesn't mean he's inhuman or dull grind. His pleasure and recreation are often found only in work." Many, of course, are not prepared for this, and naturally enough, such people have to remain as followers.

The achiever and the winner almost always earned several enemies simply because of his performance. Again, this is a price that must be paid for success. It is the lot of the winner to fight a series of battles on his way. One cannot run away from some of these. Men of lesser mettle quite often give up in such situations. There is nothing easier than just giving up. But then,

- Who will make things happen?
- Who will take the organization to newer heights?
- What challenge is left in Management?
- And finally, to which category do we want to belong – builder or caretaker?

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Article

Packaging strategies: Outlook on Consumer Buying Behaviour for FMCG Products

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Abstract

In this highly competitive market, innovative and user-friendly packaging is one of the new and creative strategies to achieve competitive advantage. Many studies are there to study the effect of product packaging on the buying behaviour of the customers, but only a few to check the holistic impact of all the different elements of packaging on the perception and buying intentions of the customers. In this study, the packaging objectives as elaborated by Kotler and Keller, i.e., identification of brand, description of the product, facilitation for transportation and protection, assistance in storage, and product consumption, are carefully studied to explain the underlying mechanism in Gujarat. AMOS (SEM) was used to test the conceptual model. This study developed a theoretical framework based on the responses from 400 respondents between the ages of 25 and 55 who are frequent FMCG buyers in one of the largest cities in India, Gujarat. The study identified assistance in storage and product consumption as a significant factor in changing the customers' perception, leading to their actual buying intention towards FMCG products.

Keywords: *Packaging, Packaging elements, FMCG, Buying intention.*

ABSTRACT

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1. Introduction

In this highly competitive market, product packaging contributes to beating the market competition. (Bettels et al., 2020; Underwood et al., 2001). One of the first things consumers notice when buying a product is the packaging (Zeng et al., 2020; Deliza & MacFie, 1996). Beautiful packaging influences consumers' decisions by making products stand out on the crowded, competitive shelf. In actuality, sturdy packaging protects the contents and facilitates handling and shipping. Therefore, packaging is essential, especially in the consumer goods sector (Economic Times, 2020). Packaging is one of the most crucial components which can improve the perception regarding the product (Baccarella et al., 2020; Decré & Cloonan, 2019). Practitioners often see packaging as a crucial marketing tool, and some businesses invest more in packaging than in advertising (Söderlund et al., 2017)

There are studies to check the impact of packaging on intentions (Baccarella et al., 2020; Rambabu & Porika, 2020), but not much to check the holistic impact of all the elements on the customer's buying behaviour. Our research aims to help academicians and practitioners of packaging by analyzing various factors/ elements of packaging like identification of brand, description of the product, facilitation for transportation and protection, assistance in storage, and product consumption is given by Kotler and Keller and further analysis their impact on the perception of the customers which in turn forms the intention to purchase Therefore this paper examines the impact of all elements of the packaging on the buying behaviour of the customers for FMCG products in Ahmedabad. The structure of the paper is like this- there is an introduction about the importance of packaging and background related to the packaging industry globally and in India, followed by a theoretical framework of the review of the studies in this field. A complete review has been done of the various elements of the packaging and its impact as a source in forming a perception. Through AMOS, the variance and factor loading have been studied properly.

1.1. Background

In 2023, it is already estimated that the packaging industry will touch 199.8 billion dollars; it is further expected to grow to more than 250 billion dollars by 2026 (Statista Research Department, 2021). On the other hand, throughout the pandemic, everyone came to appreciate the importance of putting their health and safety first. As a result, people started living more sustainably (Rundh, 2009). Regardless of the industry, consumers and manufacturers are now looking for goods with the most negligible negative impact on the environment and their health. In order to minimize any adverse effects, the packaging industry has started to use more environmentally friendly options, such as paper (Times of India 2022).

Customers' purchasing behaviour has been further stimulated by fantastic packaging, colour, wrapping, and other features (Rambabu & Porika, 2020). A substantial body of research highlights the unique characteristics of packaging where packaging is perceived as one benefit (Zhao, 2021). As one of the elements of marketing information, the content on food packaging has a considerable impact on how consumers feel about the product (Wyrwa & Barska, 2016).

2. Review of Literature

The literature review takes up the different elements of the packaging as elaborated by Kotler and Keller, i.e., identification of brand, description of the product, facilitation of transportation and protection, and assistance in storage and product consumption, and relates to the perception of the FMCG products and later concludes with the perception and the buying intention by the customers.

2.1. FMCG Packaging

In the case of FMCG products, packaging helps in ascertaining proper hygiene and product form for the customer (Zhao, 2021; Bettels et al., 2020; Wrwa & Barska, 2016). Packaging can also raise a product's perceived worth. The primary focus these days is on innovation and marketing of the products, as both of these are sources of competitive advantage for FMCG companies. More conscious consumers need sustainable packaging (Rambabu & Porika, 2020). The essential marketing strategy is to promote the products' benefits and gain a competitive edge in packaging design (Rundh, 2009; McDaniel & Baker, 1977). Zeng et al., 2020 explained that packaging connects products to people through its technical

and marketing activities. It has a significant impact on consumer purchase decisions. So, the packaging is "made of any materials, designed for storing, protecting, transporting, delivering, or presenting items, from raw materials to processed goods," according to the FDA (Droulers, 2015).

2.2. Packaging Objectives/Elements

Different objectives/ elements of packaging –- identification of brand, description of the product, facilitation for transportation and protection, assistance in storage, and product consumption are studied on the customer's perception, which in turn impacts the buying intention.

2.2.1. Packaging elements that help in the identification of the brand

Macena et al., 2021, explained that the right packaging helps easily identify the brand. The communication function of a marketer, which means providing information about a certain product and its producer to potential customers to persuade them to buy it, heavily depends upon packaging (Wyrwa & Barska, 2016). A well-informed consumer gathers information on food from a variety of sources, including and contrasts it with that found on the product labels (Magnier et al., 2016)

The visual appeal and correct information on the packaging are typically associated with its communication function. Consumers' requirements should be principally shaped by this knowledge, drawing viewers' attention and raising their interest in a product (Lomayani, 2021; Magnier, 2016). A product's appealing branding communicates competence and the calibre of the product offering. The product can be branded through a medium like print advertising, which emphasises design as a crucial tool. The advantages of having a solid brand image include the ability to be recognised by others (Lomayani, 2021; Mousavi & Jahromi, 2014).

2.2.2. Packaging elements that help in the description of the product

Labels affixed to the packaging of food products are gaining increasing consumer interest. When consumers become more aware of the link between diet and health, they are more likely to seek out nutrition information and make informed food purchase decisions. So, the proper description of the product is generated through packaging (Wyrwa & Barska, 2016; Ng et al., 2013).

2.2.3. Packaging Elements that Facilitate for transportation and Protection

FMCG packaging promotes the safety of food products and facilitates their handling and transportation (Alamri, 2021; Robertson, 2006). For the food and packaging industry, the demands for increased safety and food protection are a concern (Alves et al., 2023). The main purpose of food packaging is to safeguard the contents, maintaining the product's safety and organoleptic qualities. Characteristics like flavour, colour, and scent are crucial for FMCG customers.

2.2.4. Packaging Elements that Help in Assistance in Storage

Packaging that enables easy and convenient storage for a long time leads to better purchases (Lee, 2014; Robertson, 2006). Significant improvements in product shelf-life extension, food degradation reduction, and loss prevention are brought about by active packaging (Alves et al., 2023). Proper packaging keeps food from going to waste and guarantees it maintains the desired quality for its shelf life (Macena et al., 2021). Packaging makes storage easy and hassle-free (Mousavi & Jahromi, 2014).

2.2.5. Packaging Elements that Aid in product consumption

Packaging represents new possibilities for using and consuming the product without anybody else's assistance (Alves et al., 2023). Hallez, 2023, analysed that persuasive packaging, in terms of easy dispensing and unsealing, helps the customer consume the product in the manner desired. It also helps the buyer perceive the product better than the other competitive products as the application and consumption of the product become convenient.

2.3. Customer perception

Customers' Perception is formed by the various elements of packaging (Gil-Pérez, 2020; Khan & Lee, 2020), and manufacturers must make sure that their product, particularly online, stands out from that of their rivals and visually conveys the appropriate material perception (Decré, 2019). Further, the study

by Dolić et al., 2022 explained that consumers are inclined to make additional purchases of the product if the sensory experience meets or confirms their expectations (Pandey et al., 2019). This would result in devoted clients.

2.4. Buying intentions

It is believed that consumers purchasing patterns are essential to marketing and packaging outlooks (Dolić et al., 2022). For instance, it is believed that marketing initiatives and packaging factors, including the calibre of the materials used in packaging, information, brand image, and appealing colours, have some impact on customer purchase decisions (Lomayani, 2021). Information that the client needs to know, such as product photos, ingredient details, usage instructions, features, offers, benefits, and more, enables the client to comprehend the product more fully and helps him decide whether to buy it (Wrwa & Barska, 2016).

2.5. Hypothesis Development

2.5.1. Identification of Brand and Consumer Perception

H1: The packaging helps identify the brand and affects the customers' perception of FMCG products.

There is a strong correlation between the impact of product packaging on brand recognition and consumer perception towards the brand. In a competitive market, packaging makes it easier for customers to recognise a brand or product, and this initial recognition leaves a positive impression (Zhao, 2021; Wyrwa & Barska, 2016). Ahmad, 2022; Moriuchi & Jackson, 2017 explained that the attitude towards the brand helps form the purchase intentions. Brand recognition helps connect emotions and feelings but also helps build perception towards the different products under the brand. If the packaging gives sustainability information, for example, this affects the intentions and increases WTP (willingness to pay), an essential factor to consider (Klaiman, 2016).

2.5.2. Description of Product on Packaging and Consumer Perception

H2: The packaging helps describe a product and affects the customers' perception of FMCG products.

A consumer's opinion of a product is greatly influenced by the impact of the product description on its package. The product description on the package is a critical component since it significantly affects how consumers perceive the product (Zhao, 2021). Packaging colour, description and background help customers compare a product with competitors (Khan et al., 2018). Yeo et al., 2020, explained that the more the packaging is flexible and suitable for a particular product, the more it describes the nature of the product being carried and impacts the customer's behaviours. Packaging creates appeal and influences the buyer.

2.5.3. Facilitation of Product Transportation and Protection Through its Packaging and Consumer's Perception

H3: The packaging, which helps in product transportation and protection, affects the perception of the customers regarding FMCG products.

There is a strong correlation between the effect of product packaging on its transportation convenience and the development of a consumer's perception of the product (Söderlund, 2017; Bahrainizad & Rajabi, 2018). The secondary packaging, i.e. packaging that enables easy transportation, is more relevant in retail as there are many intermediaries, so product handling is increased (Ahmad, 2022). Products that come under the eatable category are to be transported so that the taste and consistency remain the same, so in that case, the retailer needs to focus more on care towards transportation (Grundey, 2010).

2.5.4. Assistance in Storage and Consumer Perception

H4: The packaging, which assists in storage, affects the customers' perception regarding FMCG products.

When the packaging has features that help store the product for a longer period, it improves how the consumer views it (Baccarella et al., 2021). Consumer risk perception is the outcome of the type of packaging. Certain products are classified as chemical household products; the usage and consumption of these products are widely associated with safe storage. Without this, a customer is clueless about the usage and storage of the product (Buchmüller, 2022; Grundey, 2010).

2.5.4. Product Consumption and Consumer Perception

H5: The packaging, which helps in product consumption, affects the perception of the customers regarding FMCG products.

There is a well-established link between packaging that makes it easier to consume a product and how the consumers perceive the product. Packaging created to make it simpler for customers to use and consume the product positively affects how customers form an image of it (Rambabu & Porika, 2020; Rundh, 2009). The adequate consumption and application of chemical consumer products are affected by how packaging helps use that product in the household (Ahmad, 2022; Buchmüller, 2022). (Hallez, 2023) Analysed that persuasive packaging in creative unsealing and dispensing helps the customer consume the product in the desired manner. It also helps the buyer to perceive the product as better than the competitor's.

2.5.5. Consumer Perception and Purchase Intention

H6: The customer's perception regarding the packaging has a significant impact on the buying intentions.

Consumers receive information about the product's quality, value, and distinctiveness from its packaging. A product's perceived value and desirability are raised when packaged in an eye-catching and distinctive fashion that gives a feeling of exclusivity and creativity. Contrarily, poorly designed packaging conveys a sense of low quality or inexperience, which reduces buyers' interest in the goods (Desai, 2019; Dolić et al., 2019).

Below is the proposed conceptual model based upon the different hypotheses of the study showing linkages between the constructs, consumer perception and purchase intentions.

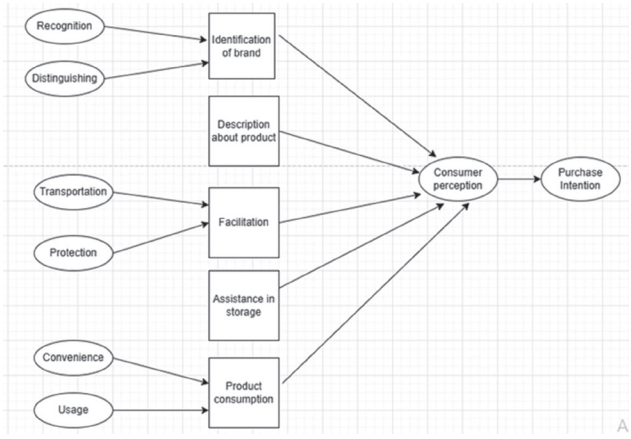

Fig 2.1: Conceptual Model

3. Research Methodology

This study incorporated the survey of the FMCG customers post-COVID in the year 2023 to understand the building blocks of their perception based upon the packaging elements as given by Kotler and Keller.

3.1. Selection of Packaging elements

Because there was not enough reference to use the packaging elements to analyse the customer's perception, five packaging elements by Kotler and Keller were taken for study to know the degree of impact of each. A pilot test was conducted through focus group discussion to validate the packaging elements and further develop the items.

3.2. Research design

In terms of its objective and technique, the current study is a descriptive survey with an applied focus. This paper's structure was created to conduct an in-depth investigation of package design, which can segregate the customers based on their desired packaging designs. This study focused on

FMCG packaging because it has more consumer participation than other products. We utilised a non-probability judgemental sampling method due to the infinite population and the inability to provide a customer list. Before the actual data collection, the analysis was done through FGDs (2 were conducted with approx. ten customers, each of whom fit the profile of this research). Four hundred participants were designated as the minimum sample size, with an error coefficient of 1%. Four hundred fifty questionnaires were sent to increase accuracy through Google link, and 400 were returned.

3.3. Focus Group Discussion

In order to finalise various constructs for the items to be studied for packaging perception, we conducted two focus groups. Since no prior study has considered Kotler and Keller elements in one go, there was a need to test all the elements before forming constructs. The participants were chosen on the basis or criterion that they must have had knowledge and experience regarding FMCG products being regular buyers. The age of the participants was between 25 -54. These discussions took place in January, wherein two moderators controlled the discussion and ensured it was unbiased. It was correctly recorded, and everybody could express their thoughts. Their statements and views were analysed carefully.

3.3.1. Mapping of various elements of packaging and the perception of the buyers through FGD

After a few general questions regarding FMCG buying and frequency, the different packaging elements were given to the participants as prompts. FGD outputs gave a meaningful framework on which various packaging elements were shaped as items with meaningful constructs. A literature review regarding identifying a brand suggests it gives information regarding the product's producer and branding. However, FGD participants said that this element helps them understand various components of the product and the sizes available through its barcodes. Similarly, for a description of the product, participants shared that this leads to complete information regarding quality standards being followed and the colour of the packaging, which helps in judging the product category. According to the literature review, facilitation for transportation and protection symbolises safeguarding the products during transportation (Macena et al., 2021), wherein participants emphasised that this also means protection of taste and quality during delivery.

Similarly, the FGD participants gave input regarding stackability for the storage element as it helps store large quantities for a longer period and cushioning because this helps safeguard. Lastly, the literature review of product consumption is directed towards consuming the product without the assistance of anybody else (Alves et al., 2023). FGD emphasised that this also means creative packaging, which makes consumption hassle-free and enjoyable.

3.4. Sampling and data collection

This study developed a theoretical framework based on the responses from 400 respondents aged 25-55 years who are frequent FMCG buyers in Ahmedabad, one of the largest cities in India. The data was collected in January and February 2023. SPSS and AMOS were used to depict the attachment mechanism between the identification of the brand, description of the product, facilitation for transportation and protection, assistance in storage and product consumption, the perception of the customer, and the buying intentions for FMCG products.

4. Analysis

4.1. Descriptive Analysis

Age Group	Percentage of Respondents (%)	Monthly Income Range	Percentage of Respondents (%)	Gender	Percentage of Respondents (%)
25-35 years	62%	3-5 lacs	60%	Male	54%
35-44 years	25%	5-10 lacs	27%	Female	46%
45-55 years	Less than 1%	More than 25 lacs	7%		
Above 55	8%	10-25 lacs	6%		

According to our descriptive analysis, 62 % of respondents who go grocery shopping, their age lay between 25-35, 25% were aged 35-44, 8% were in the age bracket above 55 years, and the least was in the range of 45-55 years. Out of the total 400 respondents, the monthly income analysis revealed – the majority, i.e. 60%, were in the range of 3-5 lacs per month, 27% of respondents were in the range of 5-10 lacs income, followed by more than 25 lacs income of 7% and the least number, i.e. 10-25 lacs by 6% of the respondents. However, more than 50% of the respondents were male, i.e. 54% and 46% were female.

4.2 Measurement model evaluation

Table 4.1: Measures of model fit

Model Fit Values		
CMIN	≤ 3 = acceptable	2.3
CFI	1 = perfectly acceptable	0.91
	≥ 0.95 = excellent	
	≥ .90 = acceptable	
TLI	1 = perfect fit, recommended value= .9	0.909
NFI	1 = perfect fit, recommended value= .9	0.90
RMSEA	≤ 0.05 = acceptable	0.04

Source: Authors' calculations conducted using AMOS

The results, as shown by our analysis of the model, revealed satisfactory outcomes in terms of different values like $\chi 2$ =666.32, DF=293, CFI =0.91, TLI =.909, NFI =0.90, and RMSEA = .04 in Table 4.1. Further, we have used convergent and discriminant validity to probe. As shown in Table 4.2, the factor loading of the different factors lies between 0.7-0.96. This is more than the recommended value, i.e. 7. The following analysis of AVE values, i.e., average variance extracted, revealed all the different constructs ranging between 0.72-0.95, which gives evidence for discriminant validity. All AVE values are more than the shared variance amongst all the pairs of factors. All CR values are also more than .7, the recommended value.

Table 4.2: Confirmatory factor analysis (n=400)

	Factor Loading	AVE	CR
Identification		0.69	0.72
Helps to identify company producing the product	0.71		
Helps in the recognition of the brands.	0.82		
Helps in the identification of the components of the product.	0.75		
Distinguishes different sizes of the product.	0.83		
Elaborates different ingredients like veg/ non veg.	0.91		
Description		0.7	0.75
Elaborates certain information regarding quality standards	0.7		
Helps to purchase the specific product.	0.75		
Provides information about product category.	0.78		
Assistance		0.71	0.85
Helps in storing the product for longer period of time.	0.85		
Enables storing the products at the right place.	0.86		
Facilitation		0.81	0.91
Facilitates proper transportation.	0.66		

Makes it easy to deliver the goods at home.	0.72		
Protects the quality of the product.	0.71		
Protects the taste of the product.	0.70		
Product consumption		0.82	0.85
Helps in proper utilisation of the product.	0.7		
Helps in dispensing and using the product at home.	0.75		
Helps in the effective utilisation of the product	0.92		
Makes it easy to use open and use the product.	0.89		
Customer Perception		0.71	0.76
Attractive Packaging attracts me and makes me aware	0.88		
I think packaging helps in keeping items fresh and hygienic.	0.78		
Compatible packaging helps the customer in providing convenience to use the products.	0.77		
It helps in perceiving the different available sizes.	0.81		
Packaging communicates proper information to me.	0.82		
Purchase Intention		0.72	0.86
Given a choice, I compare products on the basis of packages	0.95		
I prefer creative and convenience packages while buying	0.94		
I will probably buy products on the basis of packaging.	0.85		

4.3. Hypothesis Testing

Table 4.3: Hypothesis test results (n=400)

Hypothesis	Structural Path	P value	Result
H1	Identification of brand -->Customer perception	0.012	supported
H2	Description of the product -->Customer perception	0.005	supported
H3	Facilitation of transportation and protection-->Customer perception	0.25	not supported
H4	Assistance in storage -->Customer perception	0.001	supported
H5	Product consumption -->Customer perception	0.025	supported
H6	Customer perception--> Buying intentions	0.014	supported

As in Table 4.3, the Identification of the brand (H1, $p < .05$) and description of the product (H2, $p < .01$) significantly affected the customer's perception, while the Facilitation of transportation and protection (H3, $p > .1$), so it does not have a significant impact on the customer's perception. Following is the assistance in storage (H4, $p < .01$) and Product consumption (H5, $p < .01$), which means these both affect the perception of the customers significantly. Lastly, the

customer perception effect was significant (H6, $p < .01$), meaning customer perception of the packaging impacts the customers' buying intentions.

5. Discussion

This study aimed to examine the academic literature and the model, particularly emphasising how product packaging affects consumer behaviour and buying intentions.

5.1. Further Implications

First, we found that the extent of influence of different factors of the packaging, i.e., identification of brand, description of the product, facilitation of transportation and protection, assistance in storage and product consumption, relates to the perception of the FMCG customers. Our study's results clearly show that these factors significantly impact the customer's perception (Pandey et al.,2019) towards the FMCG product, allowing him/her to make better decisions regarding the purchase. The stronger the packaging in terms of assistance in storage and product consumption and identification and description of the product, the more effectively it can influence customers to accept the product/brand. Previous studies have also proved that these factors significantly impact customers' intentions (Rajkumar & Jain, 2021; Baccarella et al., 2020; Mazhar et al.,2015).

Secondly, the results revealed different factors that affect the development of buying intentions with the perception of the customers towards FMCG products (Rajkumar & Jain, 2021). Our findings show that attractive packaging, packaging that keeps the product fresh, packaging that makes the product usage convenient, and packaging that delivers information on sizes, etc., strongly impact buying intentions.

This study's findings can help FMCG brands promote and regain market share by providing products which have packaging rich in the identification of the brand (Baccarella et al., 2020), description of the product (Mazhar et al.,2015), assistance in storage and product consumption instead promoting the packaging which is rich in facilitation for transportation and protection. If a customer gets innovative packaging which helps in the usage of the product, his purchase intention becomes stronger. Businesses can use the data to construct customer-specific sales tactics. Gone are the days when customers visited the stores repeatedly; nowadays, with COVID-19, customers want to store products, buy items in bulk and want innovative packaging. The findings can help companies understand the factors valued more these days by customers while buying FMCG products. The study can help advertising companies which design and promote product packaging in India.

6. Limitations and future scope

Our study provides new insights into packaging dimensions and elaborates that these days, COVID-19, storage, ease of use, and description are very important packaging factors. The research had some limitations, too. The investigation of the packaging attributes towards factors given by Kotler was studied. Instead, the scope of the study could be broader if sustainability and environmental factors were also considered.

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Article

Influence of Talent Management Practices on Organizational Performance: A Study with Reference to IT Sector in Chennai

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Abstract

ABSTRACT

Talent management strategies provide organizations an option to retain their skilled professionals while additionally working on their overall performance. It is the course of appropriately utilizing the ideal individuals, setting them up for future top positions, exploring and dealing with their performance, and retaining them back from leaving the organization. It is employee performance that determines the success of every organization. Thus, firms are centred on creating successful talent management practices and processes to deal with the unique human resources. The study's objective was to determine the impact of talent management on organizational performance among the selected IT organizations in Chennai. The study recommends that talent management limitedly affects performance. On the off chance that this talent is appropriately management and implemented properly, organizations might benefit as much as possible from their maintained assets to support development and productivity, both monetarily and non-monetarily.

Keywords: Talent management, Organizational performance, IT organization, Competency.

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1. Introduction

Human resource experts are generally more relaxed about their organizations' daily demands, remuneration, benefits, and staffing. HR's capacity has developed throughout the years to incorporate a broad scope of organizational drives, such as training, employee improvement, variety and value in the working environment, fiasco arranging, reward management, and organizational technique formulation and execution. These organizational practices have immediate and aberrant intricacies. Accordingly, the HR department should have the option to measure, and grasp the nature and design of these frameworks. Human resource management is progressively zeroing in on talent management. This strategy was made to work on the most common way of recruiting and creating employees with the fundamental abilities and fitness to fulfill the organization's present requests. Today, an organization's prosperity is connected to its capacity to get to talent. Acquiring and retaining skilled individuals is a first concern for firms because of competition and the shortage of accessible, exceptionally talented, and skilled employees.

2. Background of the Study

The total measure of intrinsic capacities, procuring information, and skills addressed by the aptitudes and skills of an organization's workers is collectively called a human asset. To achieve individual and hierarchical objectives, HR ought to be taken advantage of to the furthest reaches possible. The sum and nature of an employee within an organization are straightforwardly connected to its exhibition and creation. The essential objective of talent management is to prepare associations for the future by planning and developing human resources to address the deficiencies of numerous potential abilities they might experience. Hence, a study into the impact of talent management practices on organizational performance in selected IT sectors in Chennai is required.

3. Talent Management

A key component of talent management is keeping and growing the most valuable resource. Nowadays, efficient talent management is one of the most important variables determining an organization's capacity to grow and prosper. In today's competitive market, companies must integrate their personnel management efforts with their overall business goals. They should also foster a culture that allows talented people to grow professionally and perform at their best. Top/key talent is accountable for producing income by bringing value to their client's experiences. The best talent management practices available in the industry will assist the organization in gaining an advantage over competitors and, more importantly, ensure that the organization is consistently one step ahead of competitors. Talent management decisions help enhance an organization's talent and business design quality, influencing employee choices. It also improves workers' skills and opportunities for professional growth, ensuring that well-trained personnel will enhance the company's reputation and overall performance. Every company that wants to increase its competitiveness and productivity should focus on attracting, maintaining, and growing intellectual capital.

3.1 The Influence of Talent Management in the IT Sector

Talent management is crucial in the ever-changing and internationally competitive information technology business. Thus, the IT sector has created many talent management techniques. Attracting and maintaining top talent is a never-ending effort in talent management, as is extending their abilities and encouraging them to improve their performances. Talent management in IT focuses on the following aspects: to get a competitive edge to stay competitive, improve business performance, drive innovation, form productive teams, lead a strong employer branding, inspire growth, and reduce employee turnover.

3.2 Organizational Performance

In today's corporate climate, finding and keeping a team devoted to improving the organisation's performance is challenging. In this competitive market, each organisation aims to provide consistent and reliable outcomes regularly. Thus, while assessing firms and their activities, organisational performance is the most important factor to evaluate.

3.3 Relationship between Talent Management and Organizational Performance

Talent in the twenty-first century has become one of the essential foundations on which companies and organizations depend to fulfil their strategic objectives, and demand for it has risen rapidly. Talent management approaches help organisations to sustain their performance for progress and change. It also helps firms identify and promote the most brilliant individuals who have the potential to become future leaders. Talent management is concerned with developing employee talent in connection to the organization's goals and objectives, resulting in enhanced competitive advantage and industry sustainability. Most experts who have studied the issue agree that culture significantly influences the sustainability of organizational performance.

4. Review of Literature

Saarunya and Soundria (2021) mentioned a vast disparity between talent management strategies in the IT business and employee socioeconomic profiles. Employee performance is positively, moderately, and strongly related to talent management methods in the IT sector. Therefore, IT organisations should provide suitable pay and benefits to employees, as well as flexible working hours. Furthermore, IT firms should pay attention to employees' emotions and feelings. Aina and Atan (2020) investigated the impact of talent management techniques on long-term organisational success in UAE real estate firms. This study contributes by evaluating talent management in the UAE. This study found that learning and development and career management had considerable beneficial impacts on sustainable organisational performance. However, talent acquisition and retention had little impact. The study proposes that management should focus on coaching, training, and job rotation to promote sustained organisational performance. Sindhura K (2022) explored systematic reviews to understand Talent Management Strategies. The findings will help researchers, HR managers, and commercial organisations. Human resource activities such as recruiting, training, motivating, and retaining high-performing personnel are critical for talent management. Lakshmi Manthena (2022) stated that nowadays, corporations do company in a planned way to make profits. Talented people will make the most competitive and successful companies.

Using a snowball sampling technique, this research was studied using descriptive statistics to prepare five-point Structured questionnaires to obtain primary data from 100 IT personnel. The study concluded that Talent Management improves organisational performance. Mohana et al. (2021) investigated the composition of "Organization Performance" among personnel in the Cement Industry of the Rayalaseema Region. The study found that personnel acquisition & retention, learning & inspiration, performance management, remuneration, succession planning, and career development contribute considerably to organisational performance. To contribute, Bestoon Othman et al. (2021) conducted an empirical review of talent management in Kurdistan-Iraq to contribute. The proposed hypotheses were tested using partial least squares tests, which were utilised to confirm their validity. Talent management, talent recruitment, career management, talent retention, and development processes are all found to have an impact on long-term organisational success, as revealed by the findings of this investigation. According to the current study, management should concentrate on recruiting talent, managing career paths, keeping talent, and developing talent through training programs and job rotation to achieve long-term organisational success. Muskan Nagi and Yousif Mohammed Ali (2020) highlighted that, in today's world, organisations are in a state of intense competition with one another; the most crucial issue for organisations is to ensure that their employees deliver flawless performance. Thus, talent management is becoming increasingly relevant and receiving greater attention around the world. It is critical for a firm to establish a great employer brand to attract and retain outstanding employees. Talented individuals must make a major contribution to their organisations and serve as the driving force behind those organisations through their proficiency and capacity to fulfil the organisation's objectives. The study investigates the influence of talent management on KMC employees' performance. According to the findings, there is a statistically significant association between talent management and employee performance.

4.1 Research Gap

The researcher seeks to fill the gaps in the studies of talent management practices by using additional performance metrics other than talent attraction and talent retention, such as workforce planning, leadership development and motivation, to determine the relationship between talent management practices and organisational performance. Previous studies went into great detail about the talent management practices that different IT firms thought were crucial, however, they did not go into detail about how these practices improved organisational performance. Also, the majority of studies analysing the link between talent management approaches and business performance have been undertaken in other countries and other industries. Hence the researcher seeks to fill these gaps by doing the study on selected IT organizations in Chennai.

5. Statement of the Problem

The researcher seeks to fill the gaps in the studies of talent management practices by using additional performance metrics other than talent attraction and talent retention, such as workforce planning, leadership development, and motivation, to determine the relationship between talent management practices and organisational performance. Previous studies went into great detail about the talent management practices that different IT firms thought were crucial. However, they needed to detail how these practices improved organisational performance. Also, most studies analysing the link between talent management approaches and business performance have been undertaken in other countries and industries. Hence, the researcher seeks to fill these gaps by studying selected IT organisations in Chennai.

6. Objectives of the Study

- To provide a fundamental grasp of talent management in the IT industry
- To identify the variables for the study of talent management practices in the IT industry
- To find the relationship between the socio-demographic factors of respondents and their perception towards talent management practices in the IT industry
- To determine the correlation between talent management practices and organisational performance in the IT sector

7. Need for the Study

Companies' workforces must now learn as many skills as required to compete with their competition. Though the demand for talent management is increasing, the supply of talented persons is far more than the demand. To close this gap, businesses must offer exceptional chances to entice people to grow their skills. It is a situation of action and reaction. Even though numerous aspects contribute to an organisation's performance, there is a need to research the factors that lead to good talent management strategies. Successful talent management techniques can benefit the business by attracting, developing, evaluating, and retaining the best personnel for both the organisation's and the talented individual's success.

Regarding the business context, the current study assists IT firms in understanding the various aspects that swiftly enhance the retention of outstanding individuals, as well as other factors that are typically short-term and unproductive. The multiple obstacles that the management of the IT sector encounters have been investigated and ranked based on the responses received from the study respondents. This allows the organisation to prioritise which issues need to be handled first. The research also includes recommendations that can assist the firm in retaining talent.

8. Scope of the Study

The current study focuses on the impact of certain talent management aspects on the organisation's success. The study will concentrate on talent management from a global viewpoint, in the context of India, and with a particular focus on IT organisations in Chennai. It will also reveal the layers of retention methods to address the issues that companies experience due to the talent shortage in the market. The current study looks at how talent management affects overall organisational performance. The research will likely help in various ways, including motivating the employees at all levels of the organisation, transforming employees into outstanding leaders, producing ready successors,

planning for future personnel needs, and developing and retaining brilliant people. It also aids HR executives and managers in comprehending the need to improve current talent management practices.

9. Profile of Study Units

IT Industries in Chennai

More than 90% of the information technology sectors in Chennai are comprised of IT consulting firms that provide software solutions. These information technology parks have raised the overall economic livelihood and living standard. With the presence of a large pool of educated individuals trained in IT, as well as the Tamil Nadu government's progressive initiatives, Tamil Nadu has achieved great success in the software sector in recent years.

- **IBM:** IBM is one of the world's most well-known information technology corporations. More than 370,000 individuals are employed by the organisation in over 170 countries throughout the world, giving it a significant global presence. IBM was founded in 1911, and throughout the last 100 years of its existence, it has made a significant impact on the globe through its competence in information technology.
- **Tech Mahindra:** Tech Mahindra Limited is an Indian global technology company founded in 1984. It is a wholly-owned subsidiary of the Mahindra Group of companies. In addition to having its headquarters in Pune and its registered office in Mumbai, Tech Mahindra also has a presence in Bangalore. It provides services for Information Technology (IT) and Business Process Outsourcing (BPO). According to the Fortune India 500 ranking, Tech Mahindra ranks 5th among Indian information technology businesses and 47th among Fortune Global 500 companies.
- **Accenture:** Accenture is an American-Irish multinational professional services corporation headquartered in Dublin, Ireland. In addition, it is a well-known Fortune Global 500 firm. During the fiscal year 2019, Accenture generated sales of 43.2 billion USD. The corporation employs a large number of people (4,92,000), a significant quantity. It provides services to a diverse range of clientele in more than 120 different countries.

10. Research Methodology

Research Design: This research is descriptive and will produce descriptive data. Because of the large quantity of data collected from surveys and secondary sources, descriptive research is the best approach for the current study. Purpose of the study: This study aimed to determine the respondents' perceptions on the relationship between talent management and organisational performance in the information technology industry, specifically focusing on the IT sector and three IT organisations from Chennai as the sample. Study area: For reasons of time and financial resource limits on the researcher's part, the study was restricted to Chennai. Universe of the Study: The study's universe includes employees from middle management and above cadre involved in talent management at the three IT businesses chosen for the study (Tech Mahindra, Accenture, and IBM) based in Chennai City. Sampling technique: The sampling method used in this study is a simple random sampling procedure, which can be found here. Sample size: The current study has a sample size of 247 respondents, which includes Middle Management and above cadre (Technology analyst, Senior Project manager, Delivery manager and Senior Delivery manager) that are involved with talent management in the three IT organisations that were chosen.

11. Data Collection

Primary Data: There were 295 questionnaires distributed, and 247 questionnaires were returned and considered eligible for use in the research. The remaining questionnaires were deemed ineligible for use in the research and were discarded. The questionnaire is divided into two parts: the first contains demographic information, and the second contains variables pertaining to various dimensions of talent management and organisational performance in selected IT companies in Chennai. The first part contains demographic information, and the second part contains variables about various dimensions of talent management and organisational performance in selected IT companies in Chennai.

The questionnaire was also constructed using a five-point Likert scale measure (i.e., from 5 strongly agree to 1 strongly disagree) to obtain the participants' responses. Various secondary sources, including websites, relevant books and journals, topic-related texts, articles and reports, newspapers and bulletins, and journals, were used to compile the secondary data for this report.

11.1 Variables of the Present Study

Independent Variables - Workforce Planning, Leadership Development & Motivation

Dependent Variables - Talent Management Practices & Organizational Performance

Reliability: The Cronbach's Alpha test was used to determine the internal consistency of several questionnaire variables. Table 1.1 summarises the findings of Cronbach's Alpha test for the five variables of talent management. The Cronbach's Alpha reliability coefficient was determined to be higher than the approved level of 0.7 for the final study in this study, and the facts are as follows:

Table – 1: Cronbach's Alpha Reliability Statistics for Talent Management Practices

Construct	No. of Scale Items	Cronbach Values for final Study
Workforce Planning	3	0.859
Leadership Development	3	0.852
Motivation	3	0.774
Talent Management Practices	3	0.779
Organizational Performance	3	0.819
Overall value of entire construct	15	0.924

Source: Output from SPSS

The results of Cronbach's reliability test on the variables of talent attraction are shown in Table 1. The obtained Cronbach value for all the constructs is higher than the permissible result for the Cronbach's test, which is 0.7.

Validity Test: In the study, both face and content validity were established. The investigator determined the face validity, while professionals in the field of investigation determined the content validity. Based on its face validity, it looks to measure whatever the researcher had in mind, namely, what he thought he was measuring.

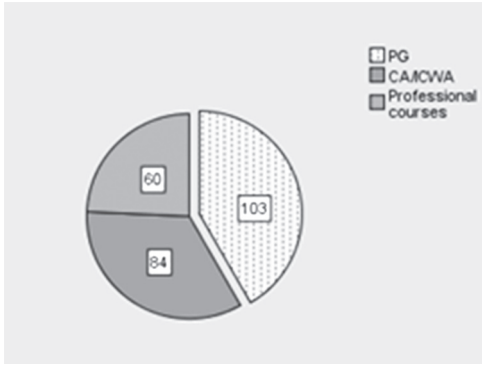
12. Analysis and Interpretation of Data/ Tools and Techniques

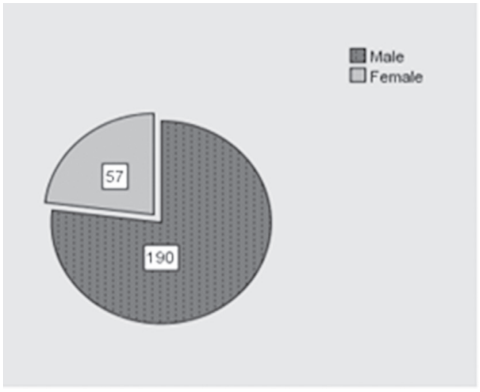
The information gathered from primary sources was carefully structured and tallied appropriately, and statistical research methods were utilised to analyse the results. The data obtained in light of the analysis was analysed and interpreted using statistical approaches, graphical representations, and pictorial techniques. Descriptive Statistical Measures, Chi-square Test, and Correlation Coefficient were used to examine the data.

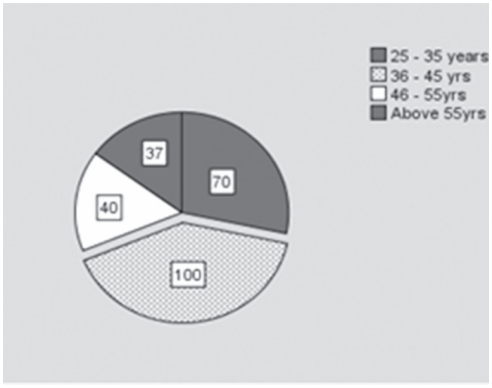
12.1 Descriptive statistics - Personal Information

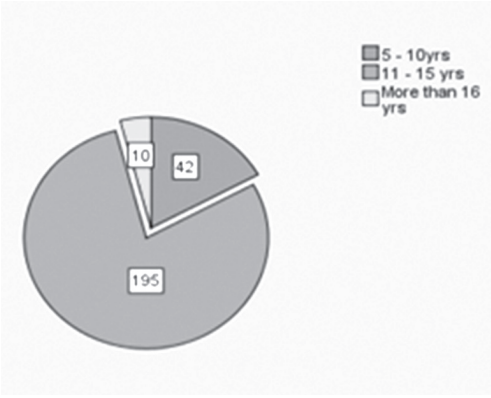
The demographic profile of the respondents may be gleaned from Table 1. Male respondents comprise 76.9% of the sample, while female respondents comprise 23.1%. 28.3% are between the ages of 25 and 35, 40.5 % are between the ages of 36 and 45, 16.2 percent are between the ages of 46 and 55, and 15 percent are beyond 55. 28.3% earn less than 12 lakhs, 58.7% earn between 13 and 15 lakhs, 9.3% earn between 16 and 18 lakhs, and 3.6% earn more than 18 lakhs yearly. 41.7% of responders are PGs, 34% are CA/ICWAs, and 24.3% are professionals. Only 4% of respondents had more than 16 years of experience, with about 17% having 5–10 years of experience, 78.9% having 11–15 years, and only 7% having more than 16 years of experience. Senior project managers and delivery managers account for 38.5% of responders, technology analysts for 17.8%, and senior delivery managers for 5.3%.

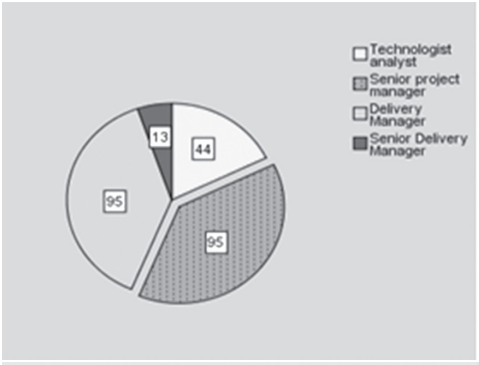
Figure -1: Age, Gender, Experience, Designation, Education, Annual Income

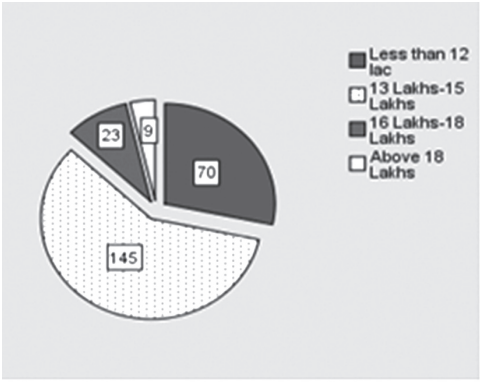












Source – Primary Data

12.2 Correlation Test

$H_{n1:}$ There is no statistically significant association between workforce planning and talent management techniques.

$H_{a1:}$ There is a statistically significant association between workforce planning and talent management techniques.

Table – 2: Talent Management Practices and Workforce Planning

		Workforce Planning	Talent Management Practices
Workforce Planning	Correlation	1	0.651**
	Sig.		0.000
	N	247	247
Talent Management Practices	Correlation	0.651**	1
	Sig.	.000	
	N	247	247

**@ 0.01 level

Analysis & Interpretation: The correlation coefficient between workforce planning and talent management practices is 0.651, as shown in Table 2. It denotes

the existence of a positive relationship between two variables. At a 1% significance level, the resulting correlation coefficient is judged to be significant. As a result, the null hypothesis is ruled out, whereas the alternative hypothesis is accepted. It appears reasonable to conclude that workforce planning and talent management practises are intertwined. It means these two variables, i.e. workforce planning and talent management practices, have a strong link.

Correlation Test

$H_{n2:}$ Organizational performance and motivation do not appear to have a statistically meaningful link.

$H_{a2:}$ Organizational performance and motivation do appear to have a statistically meaningful link.

Table – 3: Motivation and Organizational Performance

		Motivation	Organizational Performance
Motivation	Correlation	1	0.792**
	Sig.		.000
	N	247	247
Organizational Performance	Correlation	0.792**	1
	Sig.	.000	
	N	247	247

**@ 0.01 level

Analysis & Interpretation: Table 3 shows that the correlation coefficient between motivation and organisational performance is 0.792. It indicates that there is an affirmative association between the two factors. The resultant correlation coefficient is considered significant at a 1% significance level. Consequently, the null hypothesis is rejected, while the alternative hypothesis is accepted. It is acceptable to conclude that motivation and organisational performance are linked. It implies that these two sets of factors, namely motivation and organisational performance, are inextricably linked.

Correlation Test

$H_{n3:}$ Talent management techniques do not appear to have a statistically significant association with organisational success.

$H_{a3:}$ Talent management techniques do appear to have a statistically significant association with organisational success.

Table – 4: Talent Management Practices and Organizational Performance

		Talent Management Practices	Organizational Performance
Talent Management Practices	Correlation	1	0.594**
	Sig.		.000
	N	247	247
Organizational Performance	Pearson Correlation	0.594**	1
	Sig.	.000	
	N	247	247

**@ 0.01 level

Analysis and Interpretation: The correlation coefficient between talent management practises and organisational performance is 0.594, as shown in Table 4. It suggests that the two variables have a positive relationship. At a 1% significant level, the resulting correlation analysis is considered significant. The null hypothesis is thus invalidated, while the alternative hypothesis is accepted. It is acceptable to conclude that talent management practices and organisational performance are linked. It implies that these two factors, namely talent management practices and organisational performance, are inextricably linked.

Correlation Test

$H_{n4:}$ There is no statistically significant association between leadership growth and motivation.

$H_{a4:}$ There is a considerable relationship between leaders' development and employees' motivation.

Table – 5: Leadership Development and Motivation

		Leadership Development	Motivation
Leadership Development	Correlation	1	0.752**
	Sig.		.000
	N	247	247
Motivation	Correlation	0.752**	1
	Sig.	.000	
	N	247	247

**@ 0.01 level

Analysis and Interpretation: The correlation coefficient between leadership development and motivation is 0.752, as seen in Table 5. It suggests that the two variables have a positive relationship. At a 1% significance level, the resulting correlation coefficient is deemed significant. The null hypothesis is therefore rejected, whereas the alternative hypothesis is accepted. It is reasonable to conclude that leadership development and motivation are intertwined. It indicates that these two aspects, leadership development and motivation, are inexorably intertwined.

13. Implications:

The talent management programme is more than a tool for managers. It is a paradigm shift in how they view and position individuals in the workplace. Managers should be mindful that newer generations of employees, particularly millennials, are considered to have much lower levels of dedication to their jobs (Glazer et al., 2019). More autonomy, respect, and acknowledgement are routinely requested. Furthermore, it has been claimed that following the COVID-19 pandemic, employees' behaviour and expectations may shift dramatically (Carnevale & Hatak, 2020). As a result, managers should be more efficient in launching TM initiatives and focusing on motivating, developing, and retaining new personnel.

14. Limitations of the Study:

The study was limited to Chennai city of Tamil Nadu. Hence, the conclusions obtained may not apply to other states. The survey approach used to collect data for this study has its own set of limitations. Only 247 middle-level managers and above cadre from the IT industry were chosen from the population to provide first-hand information. It was only possible to contact the selected respondents due to time and financial restrictions. Thus, the generalisation of the study's conclusions is hampered by these constraints. The survey received a slow response from the respondents, primarily busy senior-level managers of the IT sector. Most IT companies regard some information to be confidential. Thus, they could not divulge much of it.

15. Findings

- The bulk of the 247 people who participated in the poll were men between the ages of 36 and 45. Most respondents are postgraduates who work as senior project managers and delivery managers and earn between 13 and 15 lakhs a year. The responders had an average of 11 to 15 years of job experience.
- The correlation analysis between the variables shows that at a 1% significance level, the resulting correlation coefficient is judged to be significant. Workforce planning and talent management practice, motivation and organisational performance, leadership development and motivation, talent management practises, and organisational performance all have a strong link.

16. Suggestions

There will be significant growth in organisational performance if firms can successfully manage their people. Any firm must motivate employees by acknowledging their accomplishments. To improve performance, it is critical to have effective incentive and recognition practices in place. Employees are motivated when their performance is recognised and their efforts are appreciated, which leads to the organisation. Retaining talented individuals in the organisation is a prerequisite for the organisation's success. The regulations described above assist the organisation in retaining talented personnel who effectively contribute to improved organisational performance. Employees in the IT field should be given short-term regular assignments with defined objectives, which will help them develop their talent and inspire them to meet the organisation's goals.

17. Conclusion

The findings of this study are based on a data analysis of talent management practices in the IT industry and their impact on organisational performance. According to the analysis and study, talent management is favourably associated with total organisational performance. In today's world, talent management, despite being a relatively new idea, is tremendously significant. As previously said, Talent Management plays a critical role in achieving overall organisational performance by ensuring that HR objects, functions, and processes are aligned with the organisation's overall performance. IT organisations must prioritise talent management practices as human resource-oriented businesses dealing with employee talent to ensure their performance levels peak and remain high throughout. Thus, it can be concluded that talent management has a significant partial impact on organisational performance, and all IT companies should incorporate it into their business plans or strategies to improve effectiveness, profitability, and revenue growth, allowing them to be more successful and gain a competitive advantage in this changing business environment and economy.

18. Future Scope

Future studies can focus on developing metrics to measure the exact relationship between talent management activities and business success. While the common consensus is that there is a correlation between the two, additional research is needed to establish the relationship for more focused talent management strategies. Longitudinal studies can also be conducted to assess the impact of talent management strategies on the performance and productivity of employees. Also, studies on the relationship between talent management and organisational development can be conducted using focus groups and qualitative research methodologies.

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APPENDIX

Section I - Demographic Information

Demographic Variable	Levels
Gender	Male
	Female
Age	25-35 years
	36-45 years
	46-55 years
	Above 55 years
Educational Qualification	Postgraduate
	CA/ICWA
	Professional courses
Work Experience	5-10 years
	11-15 years
	More than 16 years
Designation	Technology Analyst
	Senior Project Manager
	Delivery Manager
	Senior Delivery Manager
Annual Income	Less than 12 Lakhs
	13 Lakhs-15 Lakhs
	16 Lakhs-18 Lakhs
	Above 18 Lakhs

Section II - Questionnaire for Respondents

SL. No.	STATEMENTS	SDA	DA	N	A	SA
1.	Workforce Planning					
	This organization uses competency-based recruitment practices to hire the right staff.					
	Right kind of personnel are attracted to help the organization grow					
	Long term training goals are developed for new managers					
2.	Leadership Development					
	CEO and board of Directors are actively involved with leadership development activities					
	Senior leaders are viewed as corporate assets					
	Specific leader development needs are addressed through developmental assignments					
3.	Motivation					
	Ready to encourage participation and involvement in expressing ideas and creative thoughts					
	Understanding the manager's expectations and requirements is a great strategy to boost his or her performance.					
	Employee performance and discipline are boosted by negative motivation.					
4.	Talent Management Practices					
	Enriching work experience that affords enough opportunities for growth and learning.					
	Continuously augment workforce competency by imparting new skill sets and revitalizing existing ones.					
	Robust and scalable HR process to engage, motivate and retain talent					
5.	Organizational Performance					
	Talent management practices in the organization have led to increase in profitability					
	Organization's robust approach to building leadership capacity increases the financial returns					
	The formal workforce planning of the organization has contributed to a high return of investment					

Article

Information Asymmetry: A Constrain in Building Knowledge Management System in Small Enterprises

Waseeha Firdose*

Abstract

The success of a firm depends on how its knowledge is used to build own competencies and its first stage is to build own internal knowledge management system considering that the firm is a source of intelligence and knowledge. In small firms, the development of knowledge management is at its infancy or a slow process. Information asymmetry is the main reason for this, and this paper analyse sources of information asymmetry and the factors influence the development of Knowledge Management System in small firms. The respondents are micro and small firms in Bengaluru engaged in five sectors, apparel, engineering, food, machine components and OEMs. The responses were taken from managers and owners to analyse the difference in self-management and agency management. The existence of knowledge management is taken dependent variable and nine dependent variables based on investment, internal communication, documentation, and internal communication flow are used in analysis. The influence of control of business, i.e., Self-management or agency management is identified as high. Investment, documentation, internal communication are the independent variables that have high influence on implementation of Knowledge Management System.

Keywords: *Information asymmetry, knowledge management, documentation, internal communication*

JEL Code: C83, D04, D22, D23, D82, E 23

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Introduction

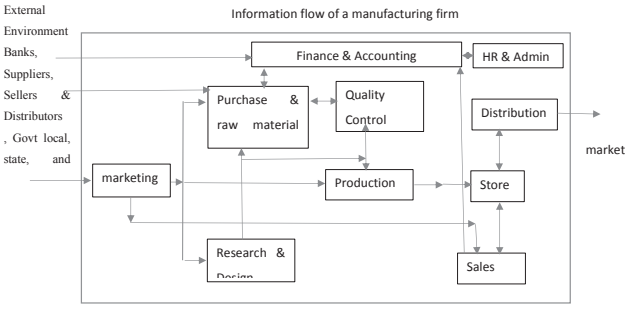
Information Asymmetry

Information asymmetry is one of the shortcomings faced by small-scale firms. There are two questions arise here,

1. How does information asymmetry arise?
2. How does it affect the organisation?

Information asymmetry is a phenomenon that arises from three defects of information flow: documentation inefficacy, system ineffectiveness and intellectual constraints (Dutt & Kusumawati, 2019). Infection in information flow arises from three sources: unclear drawings, diagrams, lack of adequate information or explanation, and non-standard notations. This is the basic source of information asymmetry in which the information is unknown, unknowingly veiled, or purposefully hidden. The information management system sets rules to document, store and retrieve information. The onus to implement a system is vested in the firm's owner, which needs investment in technology and expertise. It reduces the competitive advantage of firms.

Figure 1. Block diagram of information flow identified in a small-scale manufacturing firm



An intellectual constraint is when information cannot be understood or explained due to a lack of clarity or experience in explaining the information. Information asymmetry is when the information is confined to one source and not distributed or shared with others who need it or to whom it may be useful. It may be intentionally (controlled) or unintentionally (neither recorded nor stored). The real-time documentation will record more information. Information asymmetry is a source of recurring and non-contributing activities that cause delays at different points. The redundancy in innovative and creative improvements in the process leads to an extension of operating cycles.

The organisational system has five subsystems: environment, psycho-social, objectives, structure, and technology. The environment stands for the internal and external environment, and the resources and information flow across the boundary bilaterally. Identification of Information asymmetry in small-scale manufacturing industries (based on primary data).

Scope of research

Information asymmetry is a hidden challenge in any organisation, as management, employees, and the system are responsible for it. The MSME's contribution to the Indian GDP is approximately 30%, and the same to exports is approximately 40%. It employs 110 million people nationally. It is highly diversified in the service and manufacturing sectors (Visal, 2020). The information asymmetry is one of the bottlenecks in accessing formal finance. The pandemic season has changed the operation strategy of all firms, compelling a transition from traditional business management to a system-based platform. Hence, this research focuses on sources of information asymmetry in micro and small-scale firms in Bengaluru city, spread over different industrial estates.

Review of literature

The organisational system has five subsystems: environment, psycho-social, objectives, structure, and technology. The environment stands for both the internal and external environment, and the resources and information flow across the firm's boundary from market/ regulatory bodies to the organisation and vice versa. Structure and technology are the paths of communication. The psycho-social factors are psychological aspects of an individual and individuals in the group. The information flows in a team, from individual to individual as well as individual to team and when it is stored for future use and retrieved when it is helpful for future use [9]. The evolution of Information and Computational Technologies has developed a common platform for receiving,

storing, and accessing organisational knowledge by authorised employees to ensure confidentiality and purpose of use.

The Lotus Notes (later christened IBM Notes) was created as a platform for internal data coordination, storage, retrieval, and management of access to information. It has helped to develop and manage knowledge management systems (Prusak & Weiss, Knowledge in Organisational settings, 2007). The knowledge Management system helps track resource flow, work completion, track of previous work done, designs and alterations, and consolidating the competencies of the firm to meet future needs (Clydesdale, Entrepreneurial Opportunity: The Right Place at the Right Time. New York (Routledge, 2010)

The factors that influence the development of a Knowledge Management system include the attitude and characteristics of management (entrepreneur) (Qorraj G., 2017), investment in technology (Computerization and Digitalization), capabilities of employees to adapt to the system and to adopt changes in the system, training given to the employees and the characteristics of the firm (Fuller-Love, 2006).

Objectives

- To identify sources of information asymmetry in micro and small-scale industries
- To analyse the solutions taken by the firms
- To analyse the factors that influence the implementation of a Knowledge Management system in micro and small firms

Research Methodology

The data from this research is collected from 302 companies engaged in four domains of operations: engineering, apparel, food, machine component manufacturing, and original equipment manufacturing in the Bengaluru Industrial Estate. These firms are partially automated and partially labour-oriented.

This research has two stages: data collection through interviews with managers and owners to understand the sources of information asymmetry and the factors that influence the maintenance of a KM system in a firm. A dichotomous questionnaire is used to get the responses from the respondents to understand the probability of the influence of each factor on the implementation of a KM system. This analysis helps group the companies based on the KM system strategies for focused research to find more clarity in data and response.

The respondents of this research are proprietors and managers. The information is collected from proprietors and managers of the companies selected for the survey. In a few companies, more than one manager had responded. Production managers of all companies responded to the survey. Convenient sampling is used in this research as only those respondents who have shown readiness to share information are selected for qualitative and quantitative data collection. The response rate is 52%.

Analysis and Interpretation

The data was collected using two questionnaires to understand the response towards the information asymmetry and development of knowledge management. The interview method is used to collect qualitative information, and a questionnaire is used to understand a preliminary level analysis, the existence of independent variables in the firms, and the level these existences spread over among firms.

Binomial logistic regression is used for the data analysis as the dependent and independent variables are dichotomies to check whether the environment for healthy knowledge management exists. The dependent variable is the 'existence of a full-fledged knowledge management system'. In contrast, the independent variables are an investment in the KM system, information management system, information flow, training for employees, product standardisation, employee involvement, deviation in target achievement, the specification used in the process, documentation model, process consistency, market competition, internal communication, product promotion intensity and profitability. The three control variables used are sector, respondent, and ownership. The five sectors selected here are apparel, engineering, food, machine components and original equipment manufacturers. The two types of respondents are owners and managers. The ownerships include proprietorship, partnership, and family-run.

Binomial Logistic Regression models

The binomial logistics regression model analyses how the independent variable influences the dependent variable, the percentage of variance explained (Cox & Snell R square) or Nagelkarke R square. The probability shows the major distribution, and the -2 loglikelyhood gives the variation from the fitted model—the Wald Chi-square and the -2LLi show the model fitness. The probability shows the null effect or actual effect on the dependent variable.

Table 1: Binomial Logistic Regression models for Apparel

Model	-2log likelihood	Cox & Snell R square	Nagelkerke R square	Variable equation	Variable	Wald	Odds to probabilities
Investment	61.105	.350	.467	In(odds) = -1.792+3.045x	x=0 insufficient x=1 sufficient	11.007(p=.000) 20.490, (p=.000)	P (0) =.142 P (1) =.777
Information	44.784	.497	.662	In(odds) = 3.219-4.707x	x=0 informal x=1 formal	30.152(p=.000) 24.75, (p=.000)	P (0) =.961 P (1) =.226
Training	69.498	.259	.346	In(odds) =-.802+ 2.648x	x=0: basic introduction x= 1 systematic	5.779 (p=.000) 14.1 (p=.000)	P (0) = .31 P (1) =.864
Product standardisation	74.329	.201	.269	In(odds) =-1.504 +2.197x	x=0: nonstandard x= 1 standard	11.32 (p=.000) 22.78 (p=.000)	P (0) = .182 P (1) = .66
Employee involvement	54.535	.414	.552	In(odds) =-1.421 +3.542x	x=0: passive x= 1: active	11.392(p=.000) 22.78(p=.000)	P (0) = .19 P (1) = .892
Specification	77.202	.165	.220	In(odds) =-.693 +1.846x	x=0: Customer specified x= 1: Company specified	4.16 (p=.000) 10.18(p=.000)	P (0) = .33 P (1) = .76
Documentation	73.165	.216	.288	In(odds) =-.811 +2.197x	x=0: Informal x= 1: Formal	5.463 (p=.000) 13.03(p=.000)	P (0) = .35 P (1) = .79
Process	74.329	.201	.269	In(odds) =-1.504 +2.197x	x=0: Consistent x= 1: inconsistent	7.404 (p=.000) 11.698(p=.000)	P (0) =.18 P (1) =.66
Market Response	67.890	.278	.370	In(odds) =-2.773 +3.434x	x=0: non competitive x= 1: competitive	7.23 (p=.000) 10.18(p=.000)	P (0) =.058 P (1) =.66

The analysis shows that the existence of a Knowledge Management system in the apparel industry is influenced by investment (.777), training for employees (.864), and employee involvement (.892), which have more effect as their probability is high. The probabilities of standard products (p=.66), company-specified standards

(.76), and market competitiveness (p=.66) show that the apparel industry maintains an effective KM system. The inconsistency in process and informal internal communication are two challenges. The informal internal communication system is faster due to less documentation and accessible communication. However, there needs to be more traceability, and there is a possibility for a decrease in the correctness of information. The inconsistency is reflected due to the modulation in frequency in the quantity of products. It depends on demand, promotion, and distribution. The effect of other independent variables, which are statistically insignificant and does not contribute to the variation in the dependent variable.

Table2: Binomial Logistic Regression models for Engineering firms

Model	-2log likelihood	Cox & Snell R square	Nagelkerke R square	Variable equation	Variable	Wald	Odds to probabilities
Information	34.041	.518	.741	In(odds) = 1.846-5.044x	x=0 informal x=1 formal	8.827(p=.000) 28.01, (p=.000)	P (0) =.861 P (1) =.039
Training	41.304	.470	.672	In(odds) =-2.526+ 4.666x	x=0: basic introduction x= 1 systematic	23.62 (p=.000) 26.62 (p=.000)	P (0) = .074 P (1) =.894
Product standardisation	23.25	.586	.838	In(odds) =-3.912 +6.215x	x=0: nonstandard x= 1 standard	15.04 (p=.000) 24.6 (p=.000)	P (0) = .019 P (1) = .91
Employee involvement	81.48	.414	.552	In(odds) =-1.421 +3.542x	x=0: passive x= 1: active	11.392(p=.000) 22.78(p=.000)	P (0) = .19 P (1) = .892
Specification	77.202	.081	.118	In(odds) =-2.251 +1.7x	x=0: Customer specified x= 1: Company specified	9.171 (p=.000) 4.543(p=.000)	P (0) = .104 P (1) = .365
Documentation	59.92	.101	.145	In(odds) =-2.058 +3.157x	x=0: Informal x= 1: Formal	21.294 (p=.000) 23.53(p=.000)	P (0) = .11 P (1) = .53
Internal Communication	69.25	.22	.31	In(odds) =-2.273 +2.721x	x=0: inconsistent x= 1: consistent	7.404 (p=.000) 11.698(p=.000)	P (0) =.093 P (1) =.624
Market Response	67.890	.278	.370	In(odds) =-2.773 +3.434x	x=0: non competitive x= 1: competitive	7.23 (p=.000) 10.18(p=.000)	P (0) =.058 P (1) =.66

The internal information system is informal and the -2loglikelyhood is small compared to that of other variables. The informal communication is easy to exchange, quick, and easy to understand. In engineering industry, generally sketches will be drawn or printed professionally. Specification and documentation have a lower probability for 1 (positive response). Employee involvement and training have a high influence in Engineering industry while, specification, documentation, and market competition have a lower effect. The production process in an engineering company will be either a job works or a batch production in which the company design a product for customer and after the approval from the customer, it may be produced as a unique output or in batch production. Hence, there is a probability for using a design continuously and hence,

the probability for company specification is less. Information, training, and product standardisation has a low -2loglikelihood and Nagelkerke R square and it shows a wide variation among respondents.

Table 3: Binomial Logistic Regression models for food industries

Model	-2log likelihood	Cox & Snell R square	Nagelkerke R square	Variable equation	Variable	Wald	Odds to probabilities
Investment	29.485	.567	.777	In(odds) = -3+ 5.298x	x=0 insufficient x=1 sufficient	17.064 (p=.000) 26.114 (p=.000)	P (0) =0.047 P (1) =0.91
Information	29.845	.560	.773	In(odds) =-2.615 +5.559x	x=0 informal x=1 formal	19.115(p=.000) 21.914(p=.000)	P (0) =.068 P (1) =.95
Training	34.970	.523	.723	In(odds) =-2.590 +4.582x	x=0: basic introduction x= 1 systematic	18.72 (p=.000) 25.73 (p=.000)	P (0) = .07 P (1) =.88
Employee involvement	76.437	.09	.122	In(odds) =-1.070 +1.427x	x=0: passive x= 1: active	11.392(p=.000) 22.78(p=.000)	P (0) = .15 P (1) = .58
Deviation	72.68	.140	.194	In(odds) =-1.253 +1.792x	x=0: low x= 1: high	12.207(p=.000) 9.09(p=.000)	P (0) = .22 P (1) = .62

In the food industry, only five components are sensitive to the KM system. They all have a high probability for variables except employee involvement. Only a few variables contribute to the variation in the existence of the Knowledge Management system. It shows that the -2loglikelihood is small, and the Nagelkerke R square is high in investment, information management and training. This is due to the high variation in companies in these three variables, while employee involvement and deviation from the target have less variation. In the food industry, employee involvement is essential in maintaining quality from raw material to the packing stage, though it depends on the level of automation.

Similarly, the market demand is continuous; hence, the deviation in the target is also less. The probability for passive involvement of employees is 0.15, and the same for active involvement is .58. It shows the variation in management style in which active employee involvement shows the opportunities to take the responsibility of work with a positive attitude, interest, and involvement. The probability for low variation in output is 0.22, and these companies work 'produce to order' or subcontract production.

Table 4: Binomial Logistic Regression models for Machine component manufactures

Model	-2log likelihood	Cox & Snell R square	Nagelkerke R square	Variable equation	Variable	Wald	Odds to probabilities
Investment	30.639	.536	.716	In(odds) = -4.810 +3.315x	x=0 insufficient x=1 sufficient	9.4(p=.000) 17.5, (p=.000)	P (0) =.008 P (1) =.76
Information	30.639	.536	.716	In(odds) = -1.745+3.840x	x=0 informal x=1 formal	9.836(p=.000) 17.48, (p=.000)	P (0) =.148 P (1) =.838
Training	31.639	.532	.706	In(odds) = -1.705+3.140x	x=0: basic introduction x= 1 systematic	9.536(p=.000) 16.48, (p=.000)	P (0) =.154 P (1) =.808

Deviation	45.187	.379	.506	In(odds) =-1.894 +3.784x	x=0: low x= 1: high	5.103(p=.021) 21.78(p=.000)	P (0) = .13 P (1) = .87
Documentation	73.165	.216	.288	In(odds) =-2.398 +5.617x	x=0: Informal x= 1: Formal	5.463 (p=.000) 13.03(p=.000)	P (0) = .083 P (1) = .96
Internal Communication	47.138	.354	.473	In(odds) =-1.504 + 3.030x	x=0: informal x= 1: formal	7.404 (p=.000) 16.723(p=.000)	P (0) =.18 P (1) =.82

Table 6 shows that The -2loglikelihood is low, and the Nagelkerke R square for the machine component manufacturers is high for investment, information, training, deviation, and internal communication. This shows that the variation from the fit mode is less, but there is a significant variation explained in these variables. In the documentation, the explained variation is less. In machine components, investment, information management, training and effective internal communication are essential in maintaining process standards. Though low, a significant value of probability for internal communication (.18), deviation in output (.13), training (.15), and information management (.145) shows that these firms are traditional and focused.

Table 6: Binomial Logistic Regression models for OEMs

Model	-2log likely hood	Cox & Snell R square	Nagelkerke R square	Variable equation	Variable	Wald	Odds to probabilities
Investment	36.845	.475	.638	In(odds) = 1.910-4.107x	x=0 insufficient x=1 sufficient	12.703(p=.000) 20.106(p=.000)	P (0) =.87 P (1) =.104
Information	22.218	.606	.813	In(odds) = -2.351+ 5.647x	x=0 informal x=1 formal	10.096(p=.000) 20.125(p=.000)	P (0) =.087 P (1) =.92
Deviation	58.958	.191	.256	In(odds) =-1.609 +2.420x	x=0: low x= 1: high	11.392(p=.000) 22.78(p=.000)	P (0) = .167 P (1) = .695
specification	64.924	.090	.121	In(odds) = .693-1.386x	x=0: Customer specified x= 1: Company specified	4.16 (p=.000) 10.18(p=.000)	P (0) = .66 P (1) = .33
Profitability	61.121	.154	.207	In(odds) =1.099-1.727x	x=0: low x= 1: high	5.463 (p=.000) 13.03(p=.000)	P (0) = .75 P (1) = .349

Table 7 shows that the OEMs have an insufficient investment in the KM systems (.75) and lower profitability (.75). The products are modified according to the needs of the customers (.66). But the probability for the company specified products is also significant (.33). This shows that these companies are engaged in subcontracting than selling-own brand products in the market. The probability for deviation in output is 0.695.

Discussion

The knowledge management system is essential to an organisation's growth and development of effective control, documentation, and information flow. The data was collected from managers and owners of the firms using interviews and questionnaires. The qualitative data shows that the communication flow could be more informative due to the low information content. It is called information asymmetry. The exchange of information will be effective only when the quality and quantity of information are adequate to explain an idea. The lack of documentation causes missing information at all levels of value in the chain of process,

and the error content inflates. The qualitative data identifies fifteen cases in which order processing, brochure, customised order, product distribution and retailing information, order compilation, pricing and costing, research and development, bill of material, and material issues vary from one industry to another.

The factors that influence the implementation of the KM system in firms were analysed for different control variables: industry (apparel, engineering, food, machine components, and OEMs), management (owner or appointed manager) or the type of ownership.

The apparel industry has adequate investment in knowledge management systems, and it is essential due to the diversity in products, designs, specifications, photos and drawings, material information and value chain in the process. The traceability is crucial as the process is a multi-task value chain. However, the drawback observed is the level of informality in the system. It may be the clarifications orally given to the labours which may not be recorded. This reduces the effectiveness. The ease of communication, quickness of information exchange, and low cost cause the increase in informality in information. The training given to the employees is also systematic. Vital information in the process, like product standardisation (customised or generalised), specification (customer-given or company-designed), process consistency, and deviation from target, is effectively communicated in the system. The orders are either sub-contracting or own products. The probability for one's own product is 0.66.

Engineering firms have job work, and it is not a continuous process. The investment in the KM system needs to be improved, and the information is informal. The probability of getting a firm with formal documentation is just 0.53. This shows that firms need to focus on KM systems more due to the liability of smallness, financial constraints, and skill shortages. The firms refrain from investing in technology and human resources for the KM system as they calculate the opportunity cost of fulfilling more orders.

The food industry is also a continuous process, a multi-tasked value chain in which the information in every stage is important to develop compelling data. This industry also invests adequately in Knowledge management as the hygienic process, quality, quantity, and perfection are important.

The machine component manufacturers are again a subset of Engineering firms and focus more on designing and producing customised products. The Computerised Numerically controlled machine increases production and reduces wastage.

OEMS include electronic industries engaged in assembly lines producing electronic control systems, transducers and sensors, small engineering machines, electronic integrated machines, etc. Lower investment and high customisation are the two constraints in this industry. These firms are sub-contractors and low-profit firms.

The analysis of owners' responses shows that the financial constraints cause them inadequate investment in knowledge management systems and high informality in information systems. However, the firms' managers by managers are more professional, and an effective KM system exists in these firms except for the inadequacy of investment in the KM system. Product standardisation, high deviation in target achievement and non-competitiveness in the market are a few challenges.

The partnership firms have a similar result in managers' responses due to the importance of business control through information management. However, proprietorship firms need financial constraints in implementing knowledge management systems. However, they have a good response in implementing KM systems.

Family business shows a hybrid response of proprietorship and partnership. They maintain an effective KM system.

Limitations of the research and Scope for future research

The analysis is based on sectoral performance to analyse the variation in the effect of different sources of Information asymmetry on developing knowledge management systems. The data includes only five sectors. It could be broadened. Only one geographical location is considered in this research, and it can be

extended to more locations. The analysis can be extended to data and stratified based on different business forms, such as proprietor, partnership, etc.

Conclusion

Information asymmetry is a challenge in any business and causes an ineffective information flow. The analysis must show more investment and a high degree of informality in a communication system in implementing an effective KM system. The proprietors refrain from investing in the infancy level of the growth or fast growth stage as the need for funds in the production process is given higher priority. The partnership firms maintain an effective KM system as it is advantageous to develop an information-based system.

The more informal the operations are; the more information asymmetry exists. The financial constraint and lack of technical acumen are two challenges in developing knowledge Management in small firms. Government intervention is needed to solve this issue.

Implementing an effective KM system to reduce information asymmetry depends on the management of the firm and its commitment. The appointed managers prefer the KM system to owners. The financial constraints limit the development of an effective KM system in any business.

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Article

Analysing Entrepreneurial Behaviour, and Perception, of Farmers: A Study of Dairy Farm Management Practices in Kerala

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Abstract:

Commercial dairy farming has a fine prospect for employment throughout the year, being a source of liquidity. Due to the increase in milk demand, dairy farming is represented as one of the most important occupations and is also considered an entrepreneurial activity based on a commercial basis. Considering this fact, the present study was done in the Kollam district of Kerala to study the perception of dairy farmers in adopting management practices and the effects of socioeconomic factors on these practices. The relationship between these factors and the dairy farmers' entrepreneurial behaviour is also presented. A total of 150 respondents were chosen in the Kollam district of Kerala. For this paper, the proposed hypotheses have been exploited to create a structured questionnaire.

Moreover, the analysis is done using the Statistical Package for the Social Sciences (SPSS) for the attained data. The results revealed that socioeconomic factors significantly influence dairy farmers' management practices and entrepreneurial behaviour depending on their innovativeness and information-seeking behaviour on the dairy farm. Also, the study reveals that most dairy farmers had innovativeness and information-seeking behaviour with index values of 68.88 and 66.845, respectively. Finally, the analysis concludes that dairy farmers disagree with few scientific management practices and also possess a medium level of entrepreneurship behaviour.

Keywords: *Entrepreneurship; dairy farm; Kerala; management practices; socio-economic factors*

ABSTRACT

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Abbreviation

Abbreviation	Acronym
SCC	Somatic Cell Count
BMPs	Beneficial Management Practices
NY	New York
WI	Wisconsin
OGF	Organic, grass-fed
ECR	Energy Conversion Ratio
DTM	Dairy Tourism Model
HeECR	Human-Edible Gross Energy Conversion Ratio
SS	Sum of Squares
EBI	Entrepreneurial Behaviour Index
NDRI	National Dairy Research Institute

1. Introduction:

Globally, to extend the entrepreneurial base, entrepreneurship has been believed to be an effective tool for those with poverty-stricken financial resources or managerial backgrounds. Generally, the exact meaning of entrepreneurship is that one starts, manages, organizes the activities, and controls the business affairs unit by combining the production factors to supply the goods and services. An entrepreneur's origination is based upon intimately intertwined social, religious, cultural, psychological, and economic factors in communities (Amarnath & Samvel, 2008). For the rural economy, dairy farming is considered a crucial factor that is highly likely to make employment and income by increasing the yield of milch animals. For entrepreneurship progress in India, producing milch animals is considered the hopeful sector (Lazar, 2014). India is mainly an agrarian society wherein animal husbandry plays a significant role in an agricultural economy. In the socioeconomic development of India, animal Husbandry acts as a backbone. The livestock distribution is highly reasonable compared to that of land. Livestock farming needs minimum capital, and when compared with agriculture, the management and production expenses are minimal. Therefore, all farmers perform animal husbandry despite their economic status, and the livestock sector development would be more comprehensive (Planning Commission, 2012–17; Chandrasekar et al., 2017). Generally, dairy farming is a significant section of the worldwide food system, introducing nutritional, economic, and social advantages to a considerable percentage of the global population.

Agriculture can perform only during a specific period of the season. In contrast, dairy presents a steady income and off-season work, employing the rural population all year (Thankachan & Joseph, 2019). With a higher livestock population (512.05 million), India is blessed with extra-large livestock diversity encompassing approximately 57 % of the world's buffalo and 16% of the world's cattle population (GOI, 2018). Nevertheless, the country still faces a production failure due to the rise in demand from the rising population other than lower Indian cattle productivity (S et al., 2019). As per the Report of 2015, the population of milch animals is 676 thousand in Kerala. Also, in Kerala, the per capita milk availability reduced from 234 g/day in 2001-2002 to 203 g/day. In 2014-2015, milk production reduced from 2718 tonnes to 2711 tonnes, compared with 2001 to 2022 as per Report, 2015. This might be because of the non-flexibility of scientific dairying practices (Savale et al., 2017). In Kerala, the dairy sector faces several constraints, such as high input costs, low fodder development, and non-availability of grazing lands. Despite these negative aspects, it had established at least one institution to offer veterinary assistance in all panchayats in the state. Official government figures indicate that the state's milk production is soaring despite the reduction in the cattle population (George et al., 2018). In peri-urban areas, dairy farmers should have adequate knowledge and adopt enhanced dairy farming technologies to make the dairy business highly advantageous.

Hence, several efforts are being made to produce and distribute enhanced livestock practices or technologies to advance livestock productivity (S et al., 2019). Socioeconomic factors affect improved dairy management practices and decision-making processes (Belay et al., 2012). Thus, these factors will affect dairy production and management and, to a certain extent, the acceptance level of the farmers (Gunaseelan et al., 2017). Without a good understanding of these factors, involvement in the dairying business would be very difficult. In general, it is essential to consider socioeconomic factors that influence the improvement of mean, standard

deviation, percentiles, frequencies, and smallholder dairy production. In light of the above background, there is a need to understand the fundamentals of the present production parameters on dairy improvement in the study area for the development of appropriate and low-cost technologies which is compatible with the socioeconomic characteristics of the farmers and utilized to the advantage of the farmers to improve dairy production (Belay et al., 2012).

The main contribution of this paper is as follows:

- This study was performed in the Kollam district of Kerala state to know farmers' views on practising dairy management based on their socio-economic characteristics and their relationship with entrepreneurial behaviour.
- The study included 150 respondents to evaluate their perception of dairy management practices and socio-economic characteristics.
- The data collection is performed by presenting the questionnaire to the dairy farmers of the Kollam district in Kerala. Moreover, the statistical analysis is performed using the SPSS software.

The paper is arranged as follows: Section 2 describes the literature review associated with dairy farms and entrepreneurial behaviour. Section 3 describes a framework for the proposed hypothesis, and section 4 demonstrates the result and discussion using the SPSS. At last, section 5 summarizes the conclusion of the study.

2. Review of Literature:

In this heading, various works on dairy farm management practices and the entrepreneurial behaviour of the farmers were discussed.

Lai J et al. (Lai et al., 2018) examined how dairy managers categorise the management areas in their operations for further growth. A questionnaire was carried out from seven dairy farm management areas, including milking production, calf, financial planning, crop, risk, marketing of milk, and labour management. The analysis determined that well-built farms already placed higher prominence on employees, and labour management showed that they prioritised financial management for their achievement. In contrast, small farms needed more management outside of milking and production management. Sandrucci et al. (Sandrucci et al., 2019) surveyed 173 dairy goat farms in Northern Italy. It was performed to present a modernised view of practices in farm management.

The relationships between the herd traits, management factors, and milk production and excellence with a specific concentration on milk SCC and milk protein or fat deterioration condition were analysed. Regarding the deterioration of milk protein and fat conditions, the authors found a requirement to understand the phenomenon's genesis and its alleviation schemes. Factors other than feeding also deserve extensive awareness, particularly the high SCC influence. The influence of farm-specific BMPs on a set of complete environmental impacts was characterised by Kim D et al. (Kim et al., 2019) and quantified for two representative dairy farms in the Great Lakes region ("a large 1500-cow farm in NY and a smaller 150-cow farm in WI"). Even though this study recognised the adaptation of sustainable dairy production practices on individual impact profiles as advantageous, trade-offs between different impacts made the analysis highly complicated while considering the environmental impacts. A comparative study was conducted by Roy SK and Meena BS (Roy & Meena, 2020) to evaluate the dairy farmers' conventional diverse dairy farm management practices. This survey was conducted in the Karnal district of Haryana. For this analysis, the management practices concerning daily activities, calf management, milk management, and feed and fodder management were taken.

Fodor et al. (Fodor et al., 2018) examined the relationship between reproductive performance and management practices in Holstein cows on huge commercial dairy farms. In Hungary, the survey on cow management practices was conducted between May 2015 and November 2015 in 34 huge Holstein-Friesian dairy herds. Here, the relationship between reproductive performance and management practices was analysed by mixed-effects techniques. Snider MA et al. (Snider et al., 2021) conducted a study to assess information concerning present producer knowledge and production practices and recognise agronomic and social factors that might

influence milk production on OGF dairy farms in the United States. The outcomes of this study exhibited a requirement to model production and financial benchmarks, which assists OGF dairy producers in enhancing management practices such that economic supportability is improved. Berton M et al. (Berton et al., 2020) evaluated the effect of diverse Alpine farming systems on production efficiency (gross ECR), environmental footprint, and competition amid feed and food (potentially HeECR). The outcomes obtained were exploited to aid schemes and policies that aimed to endorse effective incorporation among mountain areas and dairy farming systems. Minhaj et al., 2019 studied constraints perceived by the farmers in the Doda district of Jammu and Kashmir. Here, the implementation of enhanced animal husbandry practices was performed. By employing a simple lottery technique, four blocks were randomly chosen. The adoption of animal husbandry practices enhanced productivity. Additionally, they presented the systemic model to generate empirical data on several socio-economic factors and constraints related to adopting scientific animal husbandry approaches.

Vanessa Ratten and Leo-Paul Dana (Ratten & Dana, 2017) conducted a case study using in-depth semi-structured interviews. It was performed to look into the sustainable entrepreneurial schemes for family farms. The study was conducted on dairy farms in Australia, in the west Victorian area. The findings recommended that family farms raise their regional determination and international standing by concentrating on their social, collaborative, and sustainable entrepreneurial schemes. Princejot Singh et al. (Singh & Hundal, 2015) studied the restraints faced by farmers in dairy adoption as entrepreneurship. In this study, 45 commercial dairy farmers of Punjab were chosen via a stratified random sampling approach and interviewed with a pre-tested questionnaire. The study showed that all the farmers entered a profession afterwards, receiving training in dairy farming. Carolien de Lauwere et al. and de Lauwere et al., (2018) exposed that dairy farmers in developing countries were still production-oriented. They mainly focused on expanding dairy production. The farmers had high proficiency levels, were highly optimistic about their future, were highly inclined to change, and were highly content with their family income and farm outcome. Investing in entrepreneurial competencies might assist farmers in coping with the challenges they are facing and keep their farms feasible.

Kuppusamy Ponnusamy et al. (Kuppusamy Ponnusamy & Meena, 2021) studied the aim of women-led entrepreneurship in dairying. This study was performed by utilising a structured interview schedule. Also, this study consists of 162 respondents working as field addition functionaries and agro-based entrepreneurs and academicians across the country. Tengli et al., (2019) conducted a study to recognise the scope for modelling the DTM. In 2016 and 2017, the study was performed in ICAR- NDRI, Karnal milking parlour premises. Here, the respondents were the milking parlour visitors. From 100 visitors, the data was gathered, and the study result was perturbed, where most respondents stated that dairy tourism had yet to evolve into other niche tourism. The perception of visitors regarding dairy tourism was different.

3. Analyzing the percipience of dairy farmers in management practices and their entrepreneurial behaviour in relation to socio-economic factors

3.1. Research Problem:

Dairy farming presents a source of daily income with a comparatively minimum level of risk. In India, numerous dairy farmers grow animals on a small scale in the usual manner (Landes et al., 2017). If the farmers scientifically run their businesses, then their productivity will be enhanced. Additionally, dairy farming can be considered a commercial, entrepreneurial activity as the most important occupation in urban regions, with higher milk demand. In dairy farming, most farmers must be aware of the recent techniques. Therefore, rather than make a profit, a few farmers will lose their investment (Jaiswal et al., 2018). To ensure the utmost profits and production, the farmers should use appropriate business plans and superior dairy management practices in dairy farming. From the opinion of dairy experts, one of the main issues dairy farmers face is animal welfare and hygiene, and the next one is raw milk marketing and dairy products. Hence, this states a significant gap between the private organisations and dairy farmers prioritising

smallholder farmers' issues. The dairy owners mostly face constraints in adopting reproduction practices, health care and disease management practices, financial and economic requirements, and difficulties in milking, marketing, storage, and distribution in the area. This paper considers the hypothesis that socioeconomic characteristics influence dairy farm management.

3.2. Research Questions:

The main aim of this paper is to exhibit the farmers' views on dairy farm management practices and the influence of socioeconomic factors on the entrepreneurship development of the dairy farmers of Kollam district, the state of Kerala, India. Therefore, the study's fundamental aim is to recognise farmers' insight views toward farm management practices, salient impacts of socioeconomic factors on entrepreneurship development in the study area, and to establish the productive prospects of a progressive dairy farm in the study area.

1. What management practices are followed by the dairy farm farmers to yield maximum production?
2. Do socioeconomic factors play a vital role in dairy farm management?
3. Can scientific management practices help dairy farmers manage their farms efficiently?
4. How to assess the level of entrepreneurship of dairy farmers?

3.3. Research Hypotheses:

H_1: The major constraint dairy farmers face depends on socioeconomic factors, like the higher cost of cattle feed and veterinary services.

The lack of finance for management practices, higher cost of raw material for dairy animal sheds, insufficient housing, and lack of appropriate knowledge of milk production economics are some of the socioeconomic factors and the important constraints selected to propose this hypothesis.

H_2: To make more efficient and sustainable milk production on a dairy farm, an assessment of the socioeconomic characteristics of farmers is necessary.

The socioeconomic characteristics of farmers affect the management practices, like the usage of milking machines, labour charges, etc., in milking production. Hence, this hypothesis intends to analyze the impact of socioeconomic factors on sustainable milk production.

H_3: Socioeconomic factors, such as income and education, contribute to dairy farms' health and feed management practices.

Hygiene, waste management, organic farming, and animal vaccination are significant practices for health management. However, these factors depend on the socioeconomic characteristics of farmers based on their income, availability of grasslands, etc. Hence, the hypothesis explains the importance of these characteristics in health and feed management practices.

H_4: Socioeconomic characteristics had a significant relationship with the extent of adoption of scientific dairy farming practices.

Adopting scientific management practices on the dairy farm is essential to determine the extent to which the information gained from the training programs has been applied. Thus, this hypothesis is proposed to analyse how the socioeconomic characteristics of dairy farmers affect scientific dairy farming practices.

H_5: Entrepreneurial behaviour is inclined by the socioeconomic traits of dairy farmers, like land holdings and income.

Landholding and annual income of dairy farmers had a positive and noteworthy relationship with their entrepreneurial behaviour. The reason to propose this hypothesis is that respondents with higher holdings would have more opportunities and possibilities to attempt and adopt several management practices, thus depending on their socioeconomic characteristics.

3.4. Framework of Hypothesis:

Figure 1 demonstrates the perception of farmers in management practices, such as scientific, health, and feed management, production, and marketing management practices, used in dairy farming and the relationship between socioeconomic factors in Entrepreneurship behaviour.

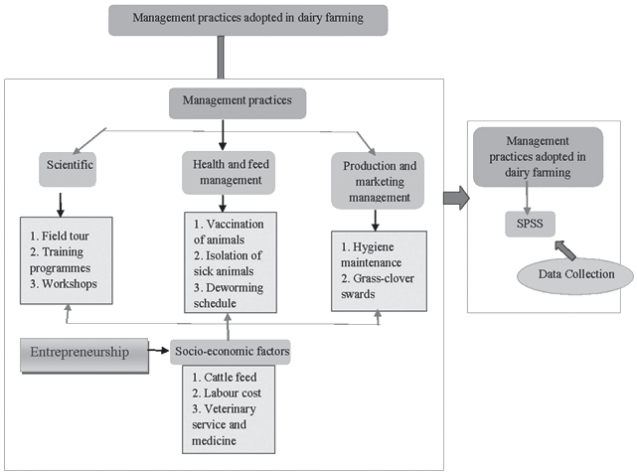


Figure 1. Framework of the research hypothesis

3.5. Variable Definition

Dependent variables: This is something that depends on certain factors. In our research, production and marketing practices, health and feed management practices, and scientific management practices are considered dependent variables.

Independent variables: The socioeconomic factor is considered the independent variable in this study.

3.6. Research Method

The research technique helps formulate the objectives and findings and presents the outcomes from the data collected throughout the study. The primary aim of the research approach is to direct the researcher in each phase to attain the study principles objective. Generally, the phases included in the study consist of reviewing the literature, forming the research question, developing the hypotheses, using techniques to collect the data, and data analysis. Thus, primary data collection was performed, and the study exploited first-hand information to identify the research issues and topics. This study blends descriptive, qualitative, and quantitative methodologies better to comprehend dairy farm management practices and socioeconomics with entrepreneurship. The descriptive technique is a research approach that investigates the characteristics of people and things. This technique is employed in the data collection stage to recognize and predict the correlations between and within the variables. By employing quantitative and qualitative analysis techniques, thoughts, concepts, views, and beliefs of the study object are linked. The main aim of this program is to develop improved dairy animal husbandry skills and to gain an enhanced knowledge of managing a commercial dairy farm based on different management practices and entrepreneurship activities.

3.5. Data Collection

This work has experienced a primary source of data collection. A structured questionnaire was employed as an instrument of data collection. The required sample was gathered by distributing the structured questionnaire to 150 dairy farmers in the Kollam district of Kerala. Also, the variables used for testing the proposed hypothesis were collected using a questionnaire. Each question was kept compulsory. The collected data was analysed using SPSS to reveal descriptive statistics, such as mean values, frequencies and percentages, and descriptive statistics.

3.6. Population of the study

In descriptive studies, it is a general practice to initially recognize a research population before directly observing a sample obtained from it. The population should be described so that those who are to be involved and excluded are clearly defined. The study has been carried out in the Kollam district of Kerala in India. The required information has been obtained to study the dairy farmer's perception of adopting management practices and the effects of socioeconomic factors on these practices. Also, 150 respondents responded to the provided questionnaire.

4. Analysis and Discussion

This study is based on the research questions and hypotheses to examine the management practices adopted in the dairy farms in Kollam district, Kerala. Five hypotheses were developed to validate the results. The proposed hypothesis uses SPSS for the analysis of the performance. The questionnaire comprises four sections: a) production and marketing practices, b) Health and feed management practices, c) Scientific management practices, and d) Socioeconomic factors.

4.1. Percentage Analysis

i. Evaluation of production and marketing management practices:

Table 1 describes the percentage assessment of production and marketing management practices. 84.7% of respondents strongly agree that purchasing animals from reliable sources with a veterinary doctor's consultation is valid. Then, 98.6% of respondents agree to ensure milk collection and transportation without undue delay. Also, 99.33% of respondents agree that exploiting a milking machine on a dairy farm is highly effective. While 40.7% of respondents agree that cows spending more time on grazing enhances the yield, 59.33% strongly agree. Conducting milk quality tests to ensure safety is strongly agreed upon by 69.33% of respondents. When most of the production and marketing practices are agreed upon by the respondents, a moderate state is found in a case: 61.33% of respondents agree, 25.33% of respondents either agree or disagree, and 13.33% of respondents strongly agree with maintaining a person (or group of people) in charge of quality management on the dairy farm.

Table 1: Percentage assessment of production and marketing management practices

Questions	Comments	Agree	Disagree	Moderate	Strongly agree	Strongly disagree
Q1	Purchasing animals from reliable sources with veterinary doctors' consultation is valid	15.3	-	-	84.7	-
Q2	Ensure milk collection and transportation without undue delay	98.6	-	-	1.33	-
Q3	Using a milking machine on the dairy farm is more effective	99.33	-	-	0.666	-
Q4	Cows spending more time a day on grazing improves the yield	40.7	-	-	59.33	-
Q5	Conducting milk quality tests assures safety	30	-	-	69.33	-
Q6	Maintaining a person (or group of people) in charge of quality management on the dairy farm is recommended	61.33	-	25.33	13.33	-

ii. Evaluation of health and feed management practices:

The percentage assessment of health and feed management practices is summarized in Table 2. It is found that 59.33% of respondents disagree that organic farming improves milk production, and 40.66% of respondents strongly disagree with the statement. 58.66 % of respondents agree that cleaning the animals with good-quality water helps maintain hygiene, and 40.66% strongly agree. The statement "clean and properly disinfect all materials and premises to avoid the risk of sickness" is agreed upon by 60.666% of respondents and strongly agreed upon by 39.33% of respondents. 67.33% of respondents agree, and 32.66% strongly agree that following a suitable waste management plan keeps the environment neat. The statement "Keeping and maintaining herd health and reproduction records" is disagreed with by 40% of respondents and strongly disagreed with by 38%. Meanwhile, 22% of respondents either agree or disagree with the statement. 76% of respondents agree, and 24% of respondents strongly agree that the vaccination of animals is a must.

Table 2: Percentage assessment of health and feed management practices

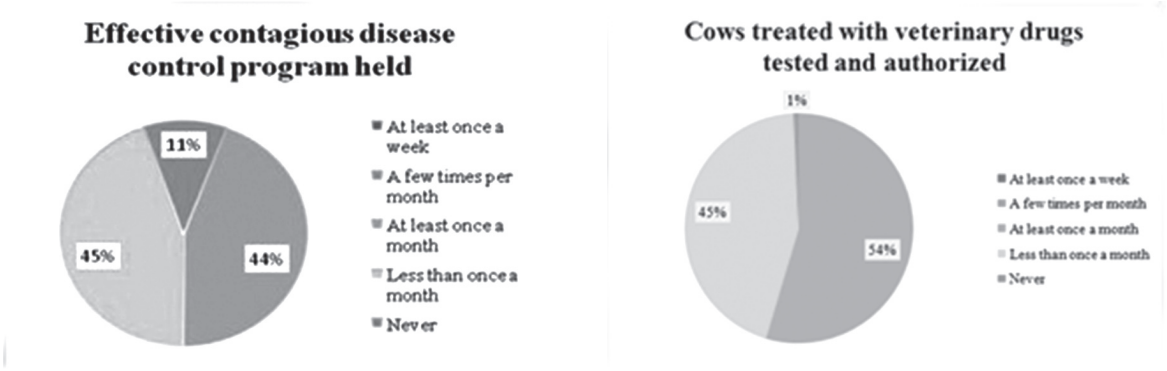
Questions	Comments	Agree	Disagree	Moderate	Strongly agree	Strongly disagree
Q1	Organic farming improves the milk production	-	59.33	-	-	40.66
Q2	Cleaning the animals with a good quality of water helps to maintain hygiene	58.66	-	-	40.66	-
Q3	Clean and properly disinfect all materials and premises to avoid the risk of sick	60.666	-	-	39.33	-
Q4	Following a suitable waste management plan keeps the environment neat	67.33	-	-	32.66	-
Q5	Keep and maintain herd health and reproduction records	-	40	22	-	38
Q6	Vaccination of animals is a must	76	-		74	-

iii. Evaluation of Scientific management practices

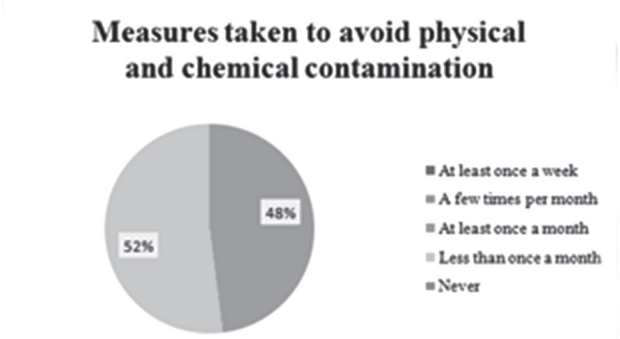
This section has been divided into two sets of practices, I and II, as one is on the option given based on the frequency, while the other is based on the farmer's opinion.

a) Scientific Management Practices I

Figure 2 demonstrates the percentage analysis of scientific management practices I. For the question, "Is there an effective contagious disease control program held?" 44% of respondents state that it is held at least once a month, 45% of respondents state less than once a month, and 11% of respondents never. When asked whether training was conducted for personal hygiene, 100% of respondents answered never. For the question, "Are the cows treated with veterinary drugs tested and authorized?" 45% of respondents stated at least once a month, 54% stated less than once a month, whereas 1% stated Never. While asking the question, "Are all the workers trained?" 100% of respondents answered never. For the statement, "Are measures taken to avoid physical and chemical contamination?" 52% of respondents stated at least once a month, and 48% stated less than once a month.



(a) **(b)**



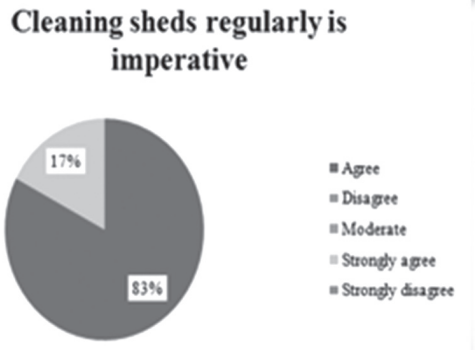
(c)

Figure 2: Pie Chart of Scientific Management Practices I

b) Scientific Management Practices II

The percentage analysis of scientific management practices II is shown in Figure 2. Here, 100% of respondents agree to follow improved breeding practices, like Artificial Insemination. Moreover, 55% of respondents agree that biogas production through waste management is a good practice that can be used for multiple purposes, and 45% strongly agree. For the statement "cleaning sheds regularly is imperative", 83% of respondents agree, and 17% strongly agree. 31% of respondents agree, and 69% strongly agree that preventing internal parasites is possible by practising a deworming schedule in calves. The statement "farmers must include various ingredients in cattle feed by understanding the nutrient requirements at different stages of cattle growth" is agreed upon by 98% and strongly agreed upon by 25% of respondents.

(a)



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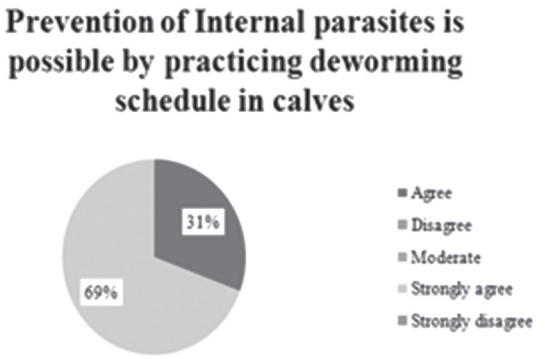

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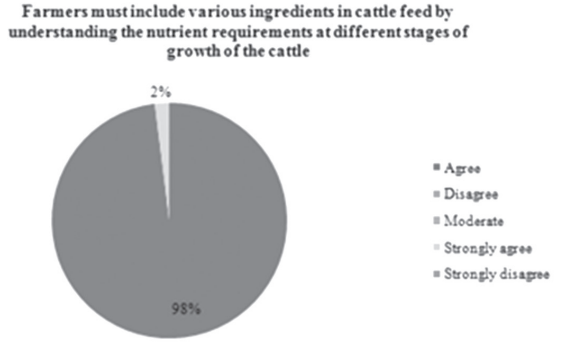

(d)

Figure 3: Pie Chart of Scientific Management Practices II

c) Evaluation of Socio-economic factors

Table 3 summarizes the percentage analysis of socio-economic factors. Here, the majority of the respondents (92.66%) are male, whereas 7.33% of respondents are female. All the respondents state that their farms contain below 15 lactating cows in their own dairying area. For the question, "Is dairy farming the main source of income?" 80.66% of respondents answered ''no'' while the remaining 19.33% said ''yes''. Moreover, most of the respondents (96%) have a second source of income, while the remaining (4%) do not. All the respondents said they do not get any financial support for their dairy business, and the cattle feed cost is not affordable. This clearly states that most management practices requiring the farmers' financial stability are less affordable. A few other factors responsible for Entrepreneurship analysis are discussed in the following section.

Table 3: Percentage analysis of socio-economic factors

Questions		Male	Female	
Q1	Gender	92.66	7.33	-
		Below 15	**15-25**	**Above 25**
Q2	How many lactating cows in the farm?	100	-	-
		Yes	**No**	
Q3	Is the total dairying area you own?	100	-	-
Q4	Is dairy farm the main source of income?	19.33	80.66	-
Q5	Do you have any second source of income?	96	4	-
Q6	Is there any financial support to your dairy business?	-	100	-
Q7	Is the cattle feed cost affordable?	-	100	-

The frequency analysis of socio-economic factors, like age, education, and annual income, is presented in Table 4.

a. **Age:** The young age group comprised of 41 to 45, and their frequency is 35.3%, whereas the middle age group comprised 46 to 54, which is 7.3%. From the Table, it is clear that most dairy farmers belonged to the old age group (55 and above) with a frequency of 57.3% because the adoption of several management practices is higher at the old age group than in the young and middle age group.

b. **Education:** Education is one of the essential components of behaviour and plays a vital role in influencing the entrepreneurial behaviour of dairy farmers. Out of 150 respondents involved in the study, 41.3% completed their schooling. Also, this study exhibited that 27.3% of dairy farmers were illiterate, and 31.3% of dairy farmers were graduated and above.

c. **Annual income:** In this study, the annual income of the dairy farmers ranged from low (below 50000), medium (50000 to 200000), and high (above 200000). It is observed that only 32% of dairy farmers' incomes are high, whereas 46% of dairy incomes are low, and 22% of dairy farmers' incomes are medium.

Table 4: Frequency analysis of the socio-economic factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Age of the dairy farmers	41 to 45	53	35.3	35.3	35.3
	46 to 54	11	7.3	7.3	42.7
	55 and above	86	57.3	57.3	100.0
	Total	150	100.0	100.0	

Education of the dairy farmers	No schooling	41	27.3	27.3	27.3
	Schooling	62	41.3	41.3	68.7
	Graduate and above	47	31.3	31.3	100.0
	Total	150	100.0	100.0	
Annual income of the dairy farmers	Low (below 50000)	69	46.0	46.0	46.0
	Medium (50000 to 200000)	33	22.0	22.0	68.0
	High (Above 200000)	48	32.0	32.0	100.0
	Total	150	100.0	100.0	

4.2. Frequency Analysis of Entrepreneurship:

Entrepreneurial behaviour is positively and considerably associated with factors like innovativeness and information-seeking behaviour of farmers towards dairy farming. Moreover, the knowledge of enhanced dairy management practices is found to have a noteworthy and positive connection with entrepreneurial behaviour. The two constraints associated with the entrepreneurial behaviour of the farmers were measured, and the result is shown in Table 5.

a) **Innovativeness:** The farmers' innovativeness is measured based on the scale in (Vishal et al., 2016). The majority (42.0%) of respondents had a medium level of innovativeness in this study. Moreover, 28.7% and 29.3% of respondents have low and high innovativeness levels, respectively. This could be because inadequate awareness of new technologies and skills, rigid beliefs, poor literacy, and confined habits of the dairy farmers might have prohibited them from being innovative and trying out innovative technologies.

b) **Information-seeking behaviour:** This behaviour is measured in this study based on the experience of the farmers in this field. It is revealed that 22.7% of respondents had low information-seeking behaviour in dairy farming, and 27.3% belonged to a medium level of information-seeking behaviour. Most respondents (50%) had a high level of information-seeking behaviour.

The characteristics of entrepreneurship in the farmers are calculated using the EBI, which uses the mean score values of the attributes (Sharma et al., 2016). It is observed that innovativeness has the highest EBI of 68.88, while the information-seeking behaviour of the respondents has an EBI of 66.845.

Table 5: Entrepreneurship Analysis

		Frequency	Percent	Valid Percent	Mean	Std. Deviation	EBI
Innovativeness (5-25)	**Low (upto 10)**	43	28.7	28.7	17.22	5.92557	68.88
	Medium (11 to 19)	63	42.0	42.0			
	High (above 20)	44	29.3	29.3			
Information-seeking behavior (3-15)	**Low (upto 5 years)**	34	22.7	22.7	10.0267	4.32403	66.845
	Medium (6 to 10 years)	41	27.3	27.3			
	High (above 10 years)	75	50.0	50.0			

4.3. Descriptive Statistics

This section demonstrates the descriptive statistics of the variables exploited in this paper. The summary statistics in Table 5 demonstrate that the primary purpose of understanding those variables is to know the decision-making environment for dairy farm management. For statistics, the average production and marketing value is 1.69%, and the standard deviation is .26787. Moreover, from the table, it is noted that, on average (2.4%), dairy farmers manage the health and feed of animals. Further, the analysis of the variables related to scientific management II exhibits that a low-level value of farm management is predominant in most farmers. In the context of Kurtosis, only 8.69 of dairy farmers concentrate on health and feed management. Also, the standard deviations of the study variables demonstrate that the data for the variables do not vary too far from their means, and the data values vary. Regarding the socioeconomic factors, the Kurtosis and skewness

standard error values were all within ± 1, indicating that they are typically distributed.

Table 5. Descriptive statistics of variables

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	**Statistic**	**Statistic**	**Statistic**	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Production and marketing management	150	1.6908	.26787	.072	5.192	.198	44.080	.394
Health and feed management	150	2.4222	.47985	.230	.320	.198	8.691	.394
Scientific management practices I	150	2.0340	.43285	.187	.636	.198	6.550	.394
Scientific management practices II	150	1.7320	.14624	.021	.003	.198	-.325	.394
Socio-economic factors	150	1.7065	.16001	.026	-.152	.198	-.421	.394
Valid N (listwise)	150							

4.4. ANOVA Analysis

The analysis of the production and marketing management impacting the dairy farm of Kollam district in Kerala is summarized in Table 6. From the ANOVA analysis, we can state that the sum of squares (SS) amid the variable is 1.307, and the residual error is 10.92 for product management. By carrying out ANOVA, the degree of freedom (df) and F ratio is represented as F (1, 10) =1.936. Subsequently, the significance level of ANOVA is set as 0.05. The hypothesis gets accepted if the probability value attained is less than the significance level. For the adopted hypothesis (H1), the probability value attained is 0.045, less than the fixed value. Hence, production and marketing management impacts the dairy farm management of Kerala. Concerning health and feed management, the SS among the variables is 4.776, and the residual error among the groups is 34.308. By carrying out the ANOVA, the df and F ratio is F (1, 10) =2.248. Here, in the adopted hypothesis (H2), the probability value attained is 0.038, less than the fixed value. Thus, Health and feed management impact the dairy farm management of Kerala. In Scientific Management Practices I, the SS among the variable is 3.509, and the residual error between groups is 27.917. The df and F ratio is represented as F (1, 10) =1.998. Here, the probability value for hypothesis H3 is 0.018, which is less than the fixed value. Hence, scientific management Practices impact the dairy farm management of Kerala.

Regarding scientific management practices II, the SS among the variable is .202, and the residual error among groups is 3.186. With respect to the df and F ratio, F (1, 10) =0.942. In hypothesis (H4), the probability value attained is 0.497, higher than the fixed value. This signifies that the scientific Management Practice II does not impact the dairy farm management of Kerala.

Table 6: ANOVA analysis of dairy farm management

		Sum of Squares	df	Mean Square	F	Sig.
Production and marketing management	Between Groups	1.307	10	.131	1.936	.045
	Within Groups	9.384	139	.068		
	Total	10.692	149			
Health and feed management	Between Groups	4.776	10	.478	2.248	.018
	Within Groups	29.531	139	.212		
	Total	34.308	149			
Scientific management practices I	Between Groups	3.509	10	.351	1.998	.038
	Within Groups	`24.408	139	.176		
	Total	27.917	149			
Scientific management practices II	Between Groups	.202	10	.020	.942	.497
	Within Groups	2.984	139	.021		
	Total	3.186	149			

5. Conclusion

The dairy business in India plays a vital role in income generation, employment, economic contribution, and export opportunities. In this connection, dairy businesses have more opportunities to start an entrepreneurial activity, enhancing employment and constant income earning in dairying. This paper discusses the farmers' management practices on dairy farms to yield maximum production. The study was carried out in the Kollam district of Kerala. Here, the entrepreneurial behaviour of the dairy farmers was evaluated by their socio-economic factors, such as innovativeness and information-seeking behaviour of the dairy farmers. A total of 150 respondents were selected and distributed with the questionnaire. The analysis was performed using SPSS analysis. The study's findings disclose the impact of the socio-economic factors of the dairy farmers in different management practices, wherein it is seen that the farmers only need a little from most of the scientific management practices. Looking at their entrepreneurial activities, they have a medium level of entrepreneurship. In the future, we can discuss rural entrepreneurs' innovation and knowledge management practices in dairy farm management.

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Article

Impact of Modes, and Media of CSR Communication on Stakeholder Engagement

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Abstract

Recently, companies have begun to place increased value on communicating their socially responsible initiatives to the stakeholders, as CSR communication is considered one of the essential elements of gaining business benefits from such efforts (Oh & Ki, 2019; Dawkins, 2004). The current study examines how various modes and media used for communicating CSR efforts of an organization influence stakeholder engagement by employing 2 modes (of CSR communication: symmetric vs. asymmetric) × 2 media (for CSR communication: social media vs. corporate websites) between-subject experiments. Official social media pages and corporate websites of a fictitious company through which CSR information is communicated employing symmetric and asymmetric modes were created and presented to a sample of 160 post-graduate students of an Indian university. The results indicate that the symmetric mode of CSR communication reports higher stakeholder engagement than the asymmetric mode of CSR communication. It is also reported that CSR creates better stakeholder engagement than corporate websites when communicated through the company's official social media pages. This research contributes to the CSR communication and marketing literature on how to ensure the engagement of the stakeholders, particularly consumers, in communicating the CSR initiatives of an organization, considering various modes and media of communicating CSR initiatives.

Keywords: *CSR, CSR communication, social media, stakeholder engagement, consumer engagement.*

ABSTRACT

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1. Introduction

In the current highly competitive marketing environment, companies worldwide consider Corporate Social Responsibility (CSR) as a strategic tool for fostering and strengthening stakeholder attention, which brings in potential benefits in the form of relationship building (Park & Kang, 2020). However, to achieve these potential benefits, companies should engage in proper, effective, and intelligent CSR communication with the stakeholders (Greenwood, 2007). Previous studies (e.g., Illia, Zyglidopoulos & Romenti, 2015) consider CSR communication a crucial and critical corporate activity because it determines the stakeholders' decisions for rewarding the organizations for their CSR activities. Moreover, if irresponsibly managed, CSR might unfavourably influence the company's success because the stakeholders are likewise expected to offer their opinions concerning the organization's CSR communication practices. In other words, stakeholder engagement has become a central component of testing the viability of organizations' CSR communication endeavours and attaining market-related outcomes. Despite an increasing tendency among companies towards CSR communication endeavours in these years, their efforts towards focusing on growing stakeholder engagement have yet to give a guaranteed result of creating stakeholder relationships. Hence, there is a need to consider various factors related to the organization's CSR communication efforts, such as modes and media of CSR communication that might affect stakeholder relationships and engagement.

Ensuring stakeholder engagement depends on the type of media used to communicate the organization's CSR initiatives (Mercadé-Melé et al., 2017). Technological development has forced companies to change their styles of conveying CSR-related messages to the stakeholders (Ali et al., 2015). Subsequently, the traditional media platforms such as newspapers, magazines, radio, and television used for communicating CSR messages are viewed as generally ineffective among the stakeholders in today's digital era (Kim & Ferguson, 2014; Dawkins, 2005; Clark, 2000). Instead, non-traditional CSR communication platforms such as corporate websites and official social media pages of the companies have advanced as potentially effective communication tools as they facilitate dialogue-oriented interactions with the stakeholders (Hayes & Carr, 2021; Troise & Camilleri, 2021). On the other hand, the open nature of these non-traditional media can give rise to significant challenges for organizations (Donn & Hriner, 2022). For example, customer feedback in the form of negative comments on CSR-related social media posts may become a severe concern for organizations because if it is not effectively managed, it would severely damage their corporate image (Yang et al., 2019). Albeit many scholarly approaches towards comparing various CSR communication platforms from their effectiveness perspective, there is a need for explicitly examining different types of non-traditional CSR communication media as they can have far-reaching impacts on stakeholder engagement.

The concept of the modes of CSR communication, namely symmetric and asymmetric modes, is generally considered an antecedent for measuring various benefits elicited by CSR communication practices (for example, Kollat & Farache, 2017). Symmetric and asymmetric modes of CSR communication influence stakeholder engagement differently (Morsing & Schultz, 2006; Morsing, 2006). Moreover, the relevant literature has recognized the significance of the dialogue-oriented, symmetric mode of CSR communication in the CSR communication practices of the organizations (e.g., Duthler & Dhanesh, 2018) that helps in ensuring participative decision-making between the company and the stakeholders toward CSR policies (Tao et al., 2018). However, comparing the symmetric and asymmetric modes of CSR communication on stakeholder engagement is considered an under-researched area. Therefore, drawing upon the conceptual frameworks of symmetric and asymmetric modes of CSR communication put forward by Kollat and Farache (2017), the current study aims to examine the role of different modes of CSR communication over various CSR communication media on stakeholder engagement by addressing the accompanying research questions:

1. Does the symmetric mode of CSR communication create more robust stakeholder engagement than the asymmetric mode?

2. Does social media create more robust stakeholder engagement than that of corporate websites?
3. Do the CSR communication media play any moderating role in the relationship between modes of CSR communication and stakeholder engagement?

We implemented an experimental approach to address these research questions by investigating the independent and combined effects of modes and media of CSR communication on stakeholder engagement. The current study makes three empirical contributions to the theory and managerial practices:

1. The degree of stakeholder engagement towards CSR communication efforts of the organizations varies to the extent of employing various modes of CSR.
2. A variety of media used for communicating CSR initiatives invariably influence stakeholder engagement.
3. CSR communication media moderates the relationship between modes of CSR communication and stakeholder engagement.

As such, the primary theoretical contribution of this research is that using a particular mode of CSR communication closely considering the peculiar features of the media of CSR communication mitigates the inherent limitations of an organization's CSR communication efforts that prevent stakeholder engagement. The clear implication is whether to respond to detailed feedback from the stakeholders must be decided based on the media to be adopted for communicating the CSR messages.

The remaining part of this paper begins by explaining this study's conceptual background and hypothesis development. We then explain the experimental method adopted for testing research hypotheses before presenting and discussing the results.

2. Conceptual Background and Hypotheses Development

2.1. Impact of Modes of CSR Communication on Stakeholder Engagement

In this technological era, creating and maintaining stakeholder relationships calls for more sophisticated communication strategies than previously (Morsing & Schultz, 2006), for example, symmetric and asymmetric modes of CSR communications (Kollat & Farache, 2017). The symmetric mode of CSR communication indicates a dialogue-oriented, proactive engagement between the company and the stakeholders regarding socially responsible initiatives, which, if necessary, prompts the organizations to make internal changes in their CSR policies in order to ensure mutual benefit to both communication parties; in contrast, an asymmetric mode relies on a sender-oriented, one-way process of informing stakeholders, where the company shows willingness neither to interact nor to engage with the stakeholders (Morsing, 2006; Grunig & Hunt, 1984; Huang, 2004). In short, the symmetric mode of CSR communication is characterized by listening to, understanding, and valuing stakeholders' feedback; on the other hand, the asymmetric mode does not promote a policy of genuinely listening to understand the concerns of the stakeholders (Lim & Greenwood, 2017; Morsing & Schultz, 2006; Grunig & White, 1992). The concept of modes of CSR communication is essential because the symmetric and asymmetric modes of CSR communication are divergent. Hence, it can have a differential impact on the perceptions of consumer trust (Kollat & Farache, 2017) and, ultimately, stakeholder engagement.

It is evident from previous literature (e.g., Kent and Taylor, 2016) that the possibility of dialogic communication between them highly influences the company-stakeholder relationship. In this line, we approach this issue from a participative decision-making perspective toward an organization's CSR policies (Tao et al., 2018). The company works with its stakeholders to participate in an organizational decision-making process of framing its CSR policies with the help of an interactive, dialogue-oriented, symmetric mode of CSR communication. Moreover, Dunn and Grimes (2022), along with others (for instance, Schultz & Wehmeier, 2010 and Lee et al.,

2018), argue that a purely asymmetric mode of CSR communication cannot enhance stakeholders' perceptions towards legitimacy and trust, however, in symmetric mode as the organizations trying to handle stakeholder responses carefully are probably more capable of aligning their CSR initiatives with the communication practices and therefore increases social approval and perceived legitimacy of the organization.

The symmetric mode of CSR communication is an interactive exchange of CSR information between the company and the stakeholder, leading to dialogic communication (Kent & Lane, 2017). Many researchers (e.g., Lee and Park, 2013) have treated dialogue backed by high interactivity as a significant factor that can evolve positive relationships between the company and the stakeholders. In symmetric CSR communication, it is expected that the voice of the stakeholders is considered in the company's CSR-related decisions and shows changes in their organizational behaviour accordingly (Park & Kang, 2020). Moreover, there are significant shreds of evidence in the literature that the involvement of the companies varying from symmetric to asymmetric modes of CSR communication shows a tendency among the stakeholders to evaluate the approach of the stakeholders from the honesty and commitment point of view. Specifically, Min et al. (2015) argued that a company, when willing to be involved in a dialogue-oriented symmetric mode, indicates its readiness to accept full responsibility from its side concerning any failure attached to the CSR policies of the company; on the other hand, asymmetric mode of CSR communication may indicate little concern from the company relating to their CSR policies (Tax et al., 1998). This responsible/irresponsible image created in the stakeholders' minds on account of various modes of CSR communication will directly influence the stakeholders' positive/negative emotional states. Based on this, the symmetric mode of CSR communication will open room for better stakeholder engagement than the asymmetric mode. Hence, based on the above argument, the following hypothesis is proposed:

H_1: The symmetric mode of CSR communication creates more robust stakeholder engagement than the asymmetric mode of CSR communication.

2.2. Influence of CSR Communication Media on Stakeholder Engagement

In addition to the modes of CSR communication, Korschun and Du (2013) highlight the potential importance of the virtual media of CSR communication in generating value for both the company and stakeholders. Companies can use various communication media, including traditional and non-traditional media, to disseminate CSR information to stakeholders (Pizzi et al., 2020). The selection of CSR communication media between traditional and non-traditional is significant because the same message in different media can influence the stakeholders' exposure differently (Reilly & Hynan, 2014). For instance, previous literature reports that the traditional media can generate a positive tone among stakeholders regarding the company's CSR policies (Lunenberg et al., 2016). However, it feels generally ineffective among the stakeholders amidst technological changes in the information and technological arenas (Kim & Ferguson, 2014; Dawkins, 2005; Clark, 2000). Hence, companies are expected to adopt non-traditional communication media for disseminating their CSR initiatives to the stakeholders. In this line, previous research has approached CSR communication to examine the relative effects and effectiveness of non-traditional media of CSR communication on influencing the mental states of the stakeholders. Of these wide varieties of non-traditional media of CSR communication, social media, as against corporate websites, which is accredited as a powerhouse of exchange of information with the least time and cost, has emerged as a potentially powerful and successful tool to communicate messages relating to CSR initiatives of an organization (Ali et al., 2015). For example, Korschun and Du (2013) proposed that social media have a significant role in co-creating value that creates a greater impact on stakeholder relationships.

As social media extents incredible opportunities for dialogic communication between organizations and their stakeholders, it can increase the persuasive power of the CSR communication efforts of an organization (Uzunoglu et al., 2017; Seele & Lock, 2015; Kaplan & Haenlein, 2010). Moreover, as CSR communication through social media creates an impression among the stakeholders that the

organizations themselves are open to criticism, a sign of corporate sincerity and transparency, it helps shape stakeholders' behaviour, including consumers. This suggests that the media activism generated by social media insists that organizations be prepared to initiate CSR communication practices and engage appropriately with stakeholders' responses even when these comments are negative (Dunn & Grimes, 2022). This, in turn, enables the companies to strengthen stakeholders' engagement in the organization's CSR activities, the relationship between the company and the stakeholders, and stakeholder advocacy (Du, Bhattacharya & Sen, 2010). In other words, companies are prepared to do more than listen to and engage with the stakeholders, which allows consumers to voice their opinions and be heard.

Moreover, social media offers corporations two-way communication through which they can transmit information relating to CSR initiatives to the stakeholders, accept immediate stakeholder feedback, and create interactions with stakeholders to build better relationships. On the contrary, corporate websites are considered low in media richness as they are relatively poor media for promoting ongoing and intimate discussions. Consequently, the company-stakeholder relationship from the CSR communication paradigm has been enriched to consider that the stakeholders now have a voice in the companies' CSR communication policies and want to be heard. Based on this argument, the following hypothesis is formulated:

H_2: Social media creates more robust stakeholder engagement than a corporate website.

2.3. Moderating role of CSR communication Media on Modes of CSR Communication and Stakeholder Engagement Relationship

As a medium of CSR communication, social media offers corporations a wide range of opportunities and can give rise to significant challenges (Dunn & Griner, 2022; Corstjens & Umblijs, 2012). Thus, it will create issues for the companies if they rely solely on social media for CSR communication. For instance, social media allows stakeholders to publicize and share their negative remarks concerning CSR initiatives, which companies may consider a severe risk to their reputation (Siti-Nabiha et al., 2021). This criticism, which can damage the corporate image, will insist that companies respond efficiently to aggregate stakeholders' misperceptions positively and repudiate the corporate image (Hayes & Carr, 2021). Hence, the uneven selection of the media of CSR communication between corporate websites and social media will help organizations approach CSR communication from a strategic point of view in such a way that tries to respond to the criticisms giving considerable importance. Likewise, while designing their CSR communication strategies, the companies need to integrate both the modes and the media of CSR communication into corporate repertoire to develop reliable and effective CSR communication outcomes in the eyes of the stakeholders (Ettinger et al., 2018; Morsing & Schultz, 2006; Morsing, 2006). In other words, the symmetric and asymmetric modes, when adopted invariably in combination with the various media of CSR communication, can mitigate the detrimental impact of the inherent challenges of the CSR communication efforts of the organizations (Morsing & Schultz, 2006).

It is, of course, essential to recognize that both modes and media of CSR communication have inherent qualities of influencing stakeholder responses. Hence, from the practical point of view, a pertinent approach towards communication effectiveness is to combine the positive effects of both these media in such a manner as to ensure stakeholder engagement. Given that the independent effects of both the social media and corporate website are likely to be positive, it is sensible to assume that the responses exhibiting the characteristics of both these media will most effectively be capable of mitigating the detrimental impact of CSR communication practices. In order to reap better results in the form of stakeholder engagement, the companies should integrate both these media and modes of CSR communication. More specifically, when it comes to applying varying modes of CSR communication in association with the types of media used for communicating the same, the stakeholders would be mentally prepared to show their tendency to engage with the CSR messages.

Regarding media-mode compatibility, a company's effort to communicate a CSR message through social media platforms by employing a symmetric

mode will likely create more robust stakeholder engagement (Kollat & Farache, 2017; Green, 2018). In other words, stakeholders' tendency to engage with the CSR messages communicated on social media platforms in a symmetric mode will be higher.

On the contrary, if the CSR message is communicated through corporate websites employing an asymmetric mode, it is also sufficient to engender the intention of the stakeholders to engage with such particular CSR messages. In contrast, a CSR message communicated through corporate websites stressing the importance of an asymmetric CSR communication mode will likely create similar outcomes. Hence, we propose the following hypotheses:

H_3: CSR communication media moderates the relationship between modes of CSR communication and stakeholder engagement such that:

H_{3a}: Symmetric mode × social media creates more robust stakeholder engagement.

H_{3b}: Asymmetric mode × corporate website creates more robust stakeholder engagement.

3. Research Methods

3.1. Experimental Design and Participants

We conducted a 2 (modes of CSR communication: symmetric vs. asymmetric) × 2 (media of CSR communication: social media vs. corporate website) between-subject experiment to test the proposed hypotheses. One hundred sixty post-graduate students from an Indian university were recruited to participate in the experiment. Among these, 55% were male, and 45% were female. The average age of the participants was 20.99 years (S. D = 0.731).

3.2. Stimuli Development and Pre-test

Prior to the main experiment, we conducted a series of focus group interviews and pre-tests to

1. Select an appropriate type of fictitious company for stimulus development, which participants would consider personally familiar and relevant.
2. Select a social cause to be used by the company used by the fictitious company for investing in socially responsible activities.
3. Develop and test stimulus materials to ensure the success of experimental manipulations.
4. Ensure the realism and believability of the stimulus materials.

Pre-test participants were recruited from the academic and industrial sectors: CSR and CSR communication experts.

Company selection. Company selection was made in a two-stage process. In the first stage, a pool of 10 experts working in the area of CSR was asked to suggest a few types of industries where the concept of CSR can be fruitfully applied. The focus group suggested various industries, including supermarket chains, pharmaceutical companies, fashion stores, hotels, banking and insurance companies, and telecommunication companies. In the second stage, a group of 30 participants was asked to rate their familiarity and relevance towards the companies suggested by the focus group. We selected the hotel industry based on the participants' highest ratings in familiarity and personal relevance (M *Familiarity* = 4.30, M *relevance* = 4.45, on a 5-point Likert scale). This result was not surprising because the hotel industry, though attracting increasing research interests, is still considered under-researched, and for whom CSR communication is of utmost importance to give visibility to their CSR investments (Ettinger et al., 2018). Consequently, we named the hotel firm 'T-Inn Hotels,' which we decided to use as the stimulus company.

Social cause selection. A group of 30 participants was selected to rate their familiarity and relevance towards the social cause from the categorisation of CSR goals by following the suggestions given by Clarkson (1995), Inou and Lee (2011), and Grosbois (2012). The classification framework of CSR goals covers supplier relations, environmental issues, diversity issues, employee relations, and product and service quality. Based on the participants' ratings, the issue of community relations was selected because this CSR goal generated the highest ratings in familiarity and personal relevance ($M_{Familiarity}$ = 4.30, $M_{relevance}$ = 4.40, on a 5-point Likert scale). This result could have been more astonishing as the stakeholders expect support from the hotel to the community in which it is situated (Ettinger et al., 2018).

Stimulus development. To manipulate modes of CSR communication, we developed two messages relating to the CSR initiatives of T-Inn Hotel in the area of community relations; we developed two fictitious news releases, both of which reported the community relations programs of 'T-Inn Hotels': one broadcasted the information to which the company neither reacted to comments nor directly addressed other stakeholders that restrict the possibility of an interactive dialogue between the company and the stakeholders (asymmetric) and the other broadcasted the information on which the company engaged into the conversation by addressing others and responded the stakeholders' reactions that facilitates and promotes a dialogue-oriented communication among the company and the stakeholders (symmetric). To manipulate media of CSR communication, we created a mock Facebook page with like, comment and share features and a corporate website that incorporated the option for the stakeholders to record their comments.

3.3. Experimental Procedures

First, the participants were randomly selected for the experiment from a list of all the university students. Then, we randomly assigned all the participants to one of the four treatments to improve the internal validity. After that, we explained the purpose of the study to the participants and then gave a detailed picture of the experimentation procedure. Following this, the participants were given a detailed description of the modes and media of CSR communication and the media usually adopted by the companies to communicate their CSR-related information to the stakeholders.

Then, the participants were directed to review the experimental stimuli for almost 10 minutes. After the review, the participants completed a questionnaire with items measuring outcome variables, covariates, manipulation checks, and realism checks. We measured the participants' demographic details at the end of the questionnaire. After completing the questionnaire, the participants were debriefed that the messages relating to the company's CSR activities they read were fictitious and created for the research purpose alone.

3.4. Measurement

We adapted an established scale from Chu, Chen and Gan (2020) to measure the outcome variable stakeholder engagement. Stakeholder engagement is the total of all organisations' activities to positively involve the stakeholders in their CSR activities (Greenwood, 2007). The construct stakeholder engagement was measured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), which contains ten items: "I would like to post my personal experiences related to the CSR activities of T-Inn Hotel", "I would like to follow or like the CSR activities of T-Inn Hotel", "I would like to post or share my thoughts about the CSR activities of T-Inn Hotel", "I would like to post or share photos, videos, memes, or gifs created by others that relate to the CSR activities of T-Inn Hotel", "I would like to post or share photos, videos, memes, or gifs created by youths that relate to the CSR activities of T-Inn Hotel", "I would like to receive messages or information from T-Inn Hotel regarding its CSR activities", "I would like to forward someone else's discussion about CSR activities of T-Inn Hotel to other people", "I would like to join Facebook groups dedicated to the CSR activities of T-Inn Hotel", "I would like to create a Facebook group dedicated to the CSR activities of T-Inn Hotel", "I would like to attend a gathering regarding the CSR activities of T-Inn Hotel that I learned about through social media". The internal reliability was $\alpha = .807$. Further, we statistically controlled for the attitude of the stakeholders towards CSR as it may affect their responses towards the stimuli (Obermiller & Spangenberg, 1998).

4. Data Analysis and Results

4.1. Manipulation and Realism Check

The manipulation check aimed to determine whether the manipulated independent variable produced the desired control condition (Islam et al., 2021; Viglia & Dolnicar, 2020). First, we assessed whether manipulating the modes of CSR communication was successful by asking the participants their level of agreement with a statement that the CSR information they had just read seemed interactive, ranging from 1 (strongly disagree) to 5 (strongly agree). The result of an independent sample t-test showed a significant between ($t_{[158]} = 21.602$, $p = .000$) symmetric mode of CSR communication ($M = 3.93$) and asymmetric

mode of CSR communication (M = 1.98). Then, we tested whether the manipulation of the media of CSR communication was successful by asking the participants their level of agreement with a statement that CSR information they have just read is posted on the official Face page of the company or the corporate website (1 = strongly disagree, 5 = strongly agree) (Dalla-Pria and Rodrıguez-de-Dios, 2022). The examination of the social media manipulation reported that those who were exposed to the official Facebook page of the company condition reported a higher score in comparison with the corporate website ($M_{[social\ media]}$ = 3.45, $M_{[corporate\ website]}$ = 2.60), $t_{(158)}$ = 4.317, p = .000). Similarly, those who were exposed in the corporate website condition reported a higher score in comparison with the official Facebook page of the company ($M_{[corporate\ website]}$ = 3.64, $M_{[social\ media]}$ = 1.95), $t_{(158)}$ = 13.265, p = .000). Hence, the study confirmed the success of the manipulated conditions. Moreover, the results also showed that the mean realism scores were satisfactory ($M_{[realism]}$ = 3.95).

4.2. Hypotheses Testing

To test hypotheses, we used a 2 (modes of CSR communication: symmetric vs. asymmetric) × 2 (media of CSR communication: social media vs. corporate website) between-subject ANCOVA with stakeholder engagement as the outcome variable and CSR attitude as the covariate. The covariate analysis showed that the CSR attitude did not significantly influence the outcome variable ($F_{[1,155]}$ = .180, p = .672). Hence, to confirm clarity, we eliminated the covariate and analysed variance to test the hypotheses.

H_1 predicted that the symmetric mode of CSR communication would create more robust stakeholder engagement than the asymmetric mode of CSR communication. There was a significant main effect of the symmetric mode of CSR communication (M = 3.48) on stakeholder engagement in comparison with the asymmetric mode of CSR communication (M = 2.70; $F_{[1,156]}$ = 86.56, p = .000). Therefore, H_1 was supported. H_2 predicted that social media as the medium of CSR communication would create more robust stakeholder engagement than corporate websites. The result showed a statistically significant main effect of social media (M = 3.20) on stakeholder engagement in comparison with corporate websites (M = 2.97; $F_{[1,156]}$ = 7.52, p < .05). Thus, H_2 was supported.

Following the main effect, we tested the interaction effect between modes of CSR communication × media of CSR communication on the outcome variable stakeholder engagement. The result was supported as statistically significant $F_{[1,156]}$ = 33.97, p = .000). Subsequently, as part of testing H_{3a} and H_{3b}, a simple effect analysis (see Figure 2 and Table 1) was conducted. The result supported that the symmetric mode of communication creates more robust stakeholder engagement in the case of social media in comparison with corporate websites ($M_{[social\ media]}$ = 3.86, $M_{[corporate\ website]}$ = 3.12, $F_{[1,156]}$ = 36.72, p = .000). Contrary to this, asymmetric mode of communication creates more robust stakeholder engagement in the case of corporate websites in comparison with social media ($M_{[corporate\ websites]}$ = 2.83, $M_{[social\ media]}$ = 2.57, $F_{[1,156]}$ = 4.76, p < .05). Hence, we found support for H_{3a} and H_{3b}.

5. Discussion of Findings

This study examined how companies investing in socially responsible activities can enhance stakeholder engagement, ensuring that the communication-related fragments are effectively utilized. To this end, we first demonstrated the differential influence of various modes of CSR communication on stakeholder engagement. Our results indicate that a symmetric mode of CSR communication creates more robust stakeholder engagement than an asymmetric one. This result supports and extends the prior evidence of the positive effect of interactive and dialogue-oriented CSR communication strategies (e.g., Morsing & Schultz, 2006; Kollat & Farache, 2017). We then tested the role played by various modern media of CSR communication in creating stakeholder engagement. Our result reveals that a company's official social media pages, when used for communicating CSR initiatives, create more robust stakeholder engagement than when communicated through corporate websites. This result is in line with the findings of Sparks and Bradley (2017) that CSR information communicated through social media enhances the stakeholders' emotional and behavioural states, leading to stakeholder engagement.

Finally, we tested the moderating role of various media of CSR communication on the relationship between modes of CSR communication and stakeholder engagement. Our result shows that the symmetric mode is more productive in enhancing stakeholder engagement if CSR information is communicated through social media platforms; similarly, in the case of asymmetric mode, the corporate website as a medium of CSR communication can create more robust stakeholder engagement. This finding confirms the academic debates that are still going on concerning the differential perceptions of stakeholders towards organizations' CSR communication efforts. Morsing and Schultz (2006) described this communication dilemma as a double-edged sword where, up to some standard level, communicating CSR initiatives serves to achieve "positive corporate virtues"; however, beyond this level, it gives some warning signal to the companies as the stakeholders may believe that the organization is trying to hide something. However, our result advances this theoretical debate by identifying that various modes of CSR communication are more effective in creating stakeholder engagement when combined with another factor, namely, the media of CSR communication. We, therefore, stress that there is a need to extend the academic debate concerning CSR communication more conclusively and holistically, considering other factors that simultaneously influence the effectiveness of CSR communication. From a theoretical perspective, our findings propose that the unique characteristics of a wide variety of CSR communication media may be considered and dealt with as a boundary condition for effectively enhancing the engagement of the stakeholders. Hence, any conceptualization of CSR communication must be approached from an integrated and holistic perspective. Such an approach extends the ongoing debate in the literature as to whether the modes and media of CSR communication are practical components of stakeholders' responses toward the CSR communication efforts of the organizations. The current study highlights the importance of the modes and media of CSR communication as crucial components of any theoretical model enhancing stakeholder engagement toward an organization's CSR initiatives.

6. Theoretical and Managerial Contributions

6.1. Theoretical Contributions

The current study contributes to many aspects of the extant literature on CSR and CSR communication. Prior studies (for example, Reilly & Larya, 2018; Mercadé-Melé et al., 2017) primarily focused on evaluating the relationship between different media employed by the organizations for communicating their CSR initiatives and the stakeholders' responses towards such communication media. However, stakeholder responses, including involvement and engagement, are highly influenced by the extent of how strategically the companies are approaching their CSR communication, where the degree of the possibility of dialogic communication varies (Morsing & Schultz, 2006; Ettinger et al., 2018; Kollat & Farache, 2017). Hence, the insights from the current study extend the concept of CSR communication by empirically displaying that both the symmetric and asymmetric modes and the non-traditional media of CSR communication, independently and jointly, stimulate the stakeholders to engage in and engage with the CSR-related policies and practices of the organizations.

Recent studies (Kim & Park, 2020) have focused on the impact of CSR-related activities on stakeholders' market-related responses in the form of positive/ negative word-of-mouth intentions. Moreover, Reilley and Larya (2018) posit that the stakeholders' intention to purchase from the companies tends to grow in recent times based on factors other than mere profit motives. However, this is directly related to how effectively the companies manage their CSR-related communication strategies (Maignan & Ferrell, 2004) based on the perceived legitimacy of the corporate social responsibility efforts (Dunn & Grimes, 2022). The current study extends this view to suggest that the symmetric mode of CSR communication can act as a tool that can trigger stakeholders' engagement with the socially responsible initiatives of the organizations. This is because the dialogue-oriented CSR communication inherited by the symmetric mode contributes to creating and maintaining a good and healthy relationship between the company and the stakeholders. Grounded in legitimacy theory, the symmetric mode of CSR communication has often

inspired organizations to fulfil the needs of firms to act responsibly in the society where they operate (Colleoni, 2013; Adelopo et al., 2012).

Prior studies in CSR communication highlighted the role of the CSR communication media on stakeholders' positive perceptions of CSR initiatives (Mercadé-Melé et al., 2017). When using different communication media, the responses from the stakeholders toward CSR initiatives can also vary (Jeong et al., 2013). The results of the current study strengthen this position by establishing the growing acceptance of social media platforms among the stakeholders as an adventurous media of CSR communication and relying on Colleoni's (2013) arguments that the relationships built on a network of peers with no central controlled entities, the current study's findings strengthen this position by verifying the positive role of social media platforms in enhancing stakeholder engagement.

6.2. Managerial Contributions

CSR communication is considered a necessary condition for attaining market-related outcomes for companies. Findings from the current study recommend several insights to the managers of the organization that invest in socially responsible initiatives to enhance stakeholders' engagement with such initiatives. This study shows that there is a one-size-fits-all solution to the CSR communication-related issues of the organizations, particularly regarding the modes- and the media-related issues. Thus, it becomes imperative for the CSR managers of the companies to create a situation-based CSR communication strategy that combines different modes of CSR communication and considers the peculiar features of the CSR communication media. In this line, when employing corporate websites to communicate CSR messages, managers should prioritize the asymmetric mode of CSR communication as the aim is to inform stakeholders regarding CSR initiatives. On the contrary, when using official social media pages, the managers should be ready to interact with the stakeholders' feedback and adopt a symmetric CSR communication mode.

Second, our study results indicate that CSR managers should prioritize the symmetric mode of CSR communication in everyday situations, as the stakeholders are interested in dialogue with the company regarding CSR initiatives. Finally, besides the corporate websites, CSR managers should use various social media platforms to contact the stakeholders to disseminate information regarding their CSR policies. As such, the stakeholders tend to report their views concerning the CSR initiatives of the organizations. With this, companies can modify their CSR policies, considering consumer feedback.

7. Limitations and Future Research Directions

Despite its valuable contributions to the theory and managerial applications, the current study needs some limitations that are expected to be addressed by future research:

1. The current study used a between-subject experimental design to investigate the impact of various modes and media of CSR communication on stakeholder engagement. Hence, it recommends future research to replicate the results employing other methodological designs, including longitudinal methods.
2. The sample is a group of post-graduate students from an Indian university, which limits the external validity of the model. Hence, we recommend reproducing the results by collecting data from actual consumers.
3. The study used the company's official Facebook page as the social media for communicating CSR initiatives. Hence, future studies can use other social media platforms such as Twitter, Instagram, and YouTube as communication media for getting richer experiences.
4. The current study evaluated the stakeholders' engagement towards the company's CSR initiatives regarding community relations. The suture studies can check the engagement of the stakeholders towards other CSR programs such as supplier relations, environmental issues, diversity issues, employee relations, and product and service quality.

5. The current study examined the impact of CSR communication practices on the hotel industry.

Other industries actively invest in socially responsible activities, including supermarket chains, pharmaceutical companies, fashion stores, and banking and insurance companies. Hence, it is recommended to evaluate such firms' CSR communication practices on their stakeholders' engagement and involvement.

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Appendices

Table 1: Sample characteristics

	N	Percentage
Gender		
Male	88	55
Female	72	45
Age		
Below 20	48	30
20 – 24	104	65
24 and above	8	5

Table 2: Manipulation check

	Mean	t-value	p-value
Modes of CSR communication			
Symmetric mode	3.93	21.602	.000
Asymmetric mode	1.98		
Social media			
Facebook	3.45	4.317	.000
Website	3.60		
Corporate website			
Website	3.64	13.265	.000
Facebook	1.95		

Table 3: Univariate ANCOVA results

ANCOVA Results			Simple Effect Analysis			
Source	F-statistics	Sig.	Moderator	Mean	F-statistics	Sig
Intercept	1527.078	0.000	Social media (A)	2.57	4.76	< .05
Modes	24.103	0.000	Website (A)	2.83		
Media	2.093	007	Social media (B)	3.86	36.72	0.000
Modes * Media	9.458	0.000	Website (B)	3.12		

Note: The covariate media involvement reported as statistically insignificant (F =.180, p = .672). A and B indicate that the communication mode is asymmetric and symmetric, respectively. Degrees of freedom (1, 155).

Figure 1: Conceptual model

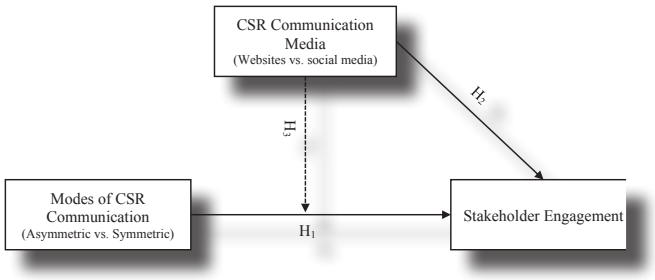


Figure 1: Conceptual Model

Figure 3: Mode × media of CSR communication interaction on message effectiveness

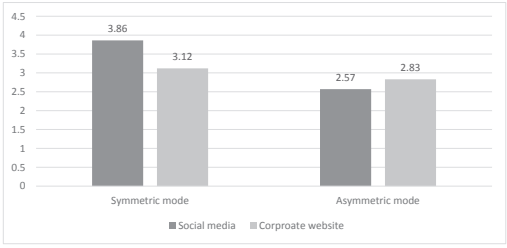


Figure 4: Stimuli material for Asymmetric-Facebook group

Figure 5: Stimuli material for Asymmetric-Website group

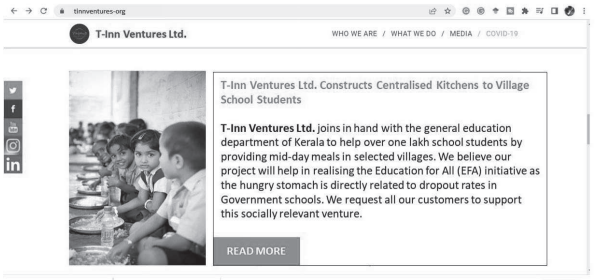


Figure 6: Stimuli material for Symmetric-Facebook group

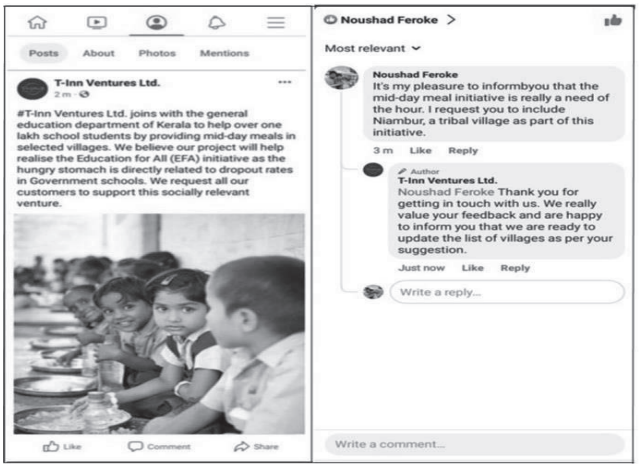
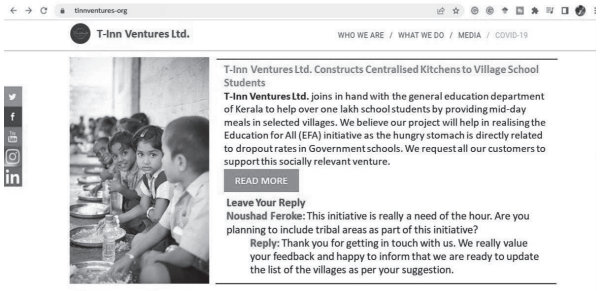


Figure 7: Stimuli material for Symmetric-Website group



Symmetric, Website

Article

Major Determinants of Logistics Cost of Manufacturer-Exporters in Dubai

S. Akilan *

M. Gurupandi

Abstract

International trade involves the exchange of products and services across international borders. It includes the exchange of capital between the nations as well. The present paper finds the major determinants of the logistics cost of manufacturer exporters in Dubai. The researcher analyses the various determinant factors responsible for manufacturer exporters in the study area. This paper identifies Nature of business, Size of company, Human factor, Range of commodity, Property of product, Infrastructure, Tax and tariff, Currency exchange, Customs clearance, Law and regulation, Demand variability of logistic Services, Cultural difference in payment, delivery and corporate culture, Application of information and communication technology, Cost of ICT, Warehouse and inventory management, Inventory model, One-stop service, Service capacity, Alliance and cooperation, Real-time information sharing and Outscoring strategy are the major determinant drivers relevant for manufacturer exporters in Dubai. Opinions and responses are received from 289 merchant exporters in the study area. In this paper, ANOVA and Rank Correlation were used for this study.

Keywords: *Logistics Cost, Major Determinants, Manufacturer Exporters*

ABSTRACT

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1. Introduction

International trade involves the exchange of products and services across international borders. It includes the exchange of capital between the nations as well. Global trade involves multi-parties, and thus, the participation of multiple nations makes it even more vibrant and equally complicated. However, it cannot be refuted that in many countries, the contribution of foreign trade represents a significant share of their respective GDP. International Trade practices play a pivotal role in pushing globalization, and Dubai is highly determined to derive the maximum out of the international trade and tourism sector. Dubai is riding high on its commitment to make it a 'numero uno' tourist destination in the world in the years to come as its oil deposits cease to exist and may not continue to safeguard its economy in the future. The stupendous skyscrapers, mega malls, and a long list of 'first of its kind' investment projects implemented by the Dubai government are testimony to their commitment. At this juncture, it is essential to remember that the central idea behind all the infrastructure projects is to improve international trade and tourism in Dubai. Over the past decades, international trade agreements and an array of regional trade integration blocs have significantly curtailed the tariff-based barriers to international trade. Not limited to the above, the helping hand rendered by the ports and ocean shipping as facilitators of international trade cannot be overshadowed.

Moreover, a country's international trade performance determines its overall productivity, as it decides the fate of attracting foreign investments.

Inefficiency in the logistics front leads to a rise in the cost of doing business and, in turn, plummets the potential for both international and domestic market integration.

2. Review of Literature

Bokor (2010), in his bid to ascertain the determinants of logistics cost and the concomitant calculation methodology, reiterated the relative importance of the Analytical Hierarchical Process (AHP) model with a determined focus on establishing a concrete theoretical fabric on the cost-driving factors in the logistics sector. For the same, the researcher measured the relevance of logistics costing and charted out the exact determinants. The research finding grounded the inevitable fact that optimising the cost matrix is a burning issue for any firm as it imposes a real-time challenge on businesses which rely exorbitantly on logistics and transportation. Thus, the activity-based costing (ABC) approach is a handy tool for mediocre firms to check the exact logistics cost constantly.

In their research analysis, **Combes et al. (2016)** developed a model in an urban logistics context with the optimal distribution centre. It focuses on fixing the cost function by carefully scrutinising the problems and the few associated assumptions. The researcher argued that the emergence of logistics sprawl leads to an increased demand for deliveries within city nodal points. Not limited to the above, the model also addresses why warehouses tend to be located farther on the city's outskirts and its association with realising the benefit of the economies of scale.

Edirisinghe and Jayathilake (2017) argued in their paper that customs plays a pivotal role in augmenting logistics performance phenomenally. The researcher expounded that the economic achievements of Sri Lanka are expected from five major hubs, namely, *maritime*, aviation, commercial, knowledge, and energy hubs. The determinants of the logistics cost structure identified in the research include border management clearance, customs efficiency, quality transport infrastructure, cost-effective shipments, and tracking technologies.

Havenga et al. (2017), in their research, substantiated that the collaboratively challenging congestions in the port, the problem of bureaucratic delay and the hinterland feeder system will expose new avenues for the stakeholders. Having researched South African ports, they have documented that the port system has undergone sea changes before attaining its present form under the aegis of the Ports Regulator of South Africa to achieve equitable access and economic regulation in the national logistics system. However, they have yet to rule out the suggestion of attempting further reform by establishing a strategic infrastructure in the long run to sustain the revenue to the national exchequer.

In their case-based research approach, **Katsela and Pålsson (2020)** highlighted the burgeoning

issue of attaining lucrative city logistics ingenuities. Using diligently exploring the determinants such as concomitant cost structure, revenue variables and the economies of scale in Sweden, the researchers presented a detailed cost-benefit analysis through a six-month pilot programme. The research results reveal a non-linear relationship between goods volume and profitability; instead, it follows a logarithmic curve. Similarly, the sensitivity analysis expounded on the impact of pricing on financial performance. However, the study suffers a notable limitation of its inability to predict the exact changes in revenues and the cost at the time of complete implementation.

Kovtun and Yushchenko (2021) critically evaluated Ukraine's prospects and potential in the green energy export sector in their investigation. This study is carried out against the backdrop of the ever-increasing cost of silver owing to the inability of the mining companies to cater to the growing demand in the marketplace. Not limited to the above, the research findings spotlight some facts crucial to the contributing factors and their invariants in determining the exact logistics cost, the models of regulating stocks, and the supply management methods.

3. Statement of the Problem

Manufacturer exporters face a different set of challenges. To achieve cost competitiveness, they have to effectively manage an array of activities such as facilities management, vendor management, human resources management, operations management, quality control, warehouse and distribution management, cargo and maritime logistics management, etc., to name a few. Despite the challenges mentioned above, the most significant advantage the manufacturer exporter can exploit over the merchant exporter is the economies of scale. Venturing into large-scale manufacturing, they can take an array of formative steps to cut down the unit cost of their product. Suppose the product can fulfil the expectations of the foreign customer. In that case, they can expand their profit margin to a greater extent by effectively supplying the goods. In other words, they can levy premium pricing for their product to a foreign customer.

In contrast, the same sophistication could be more conducive for many merchant exporters owing to rigorous competition. The general problems faced by manufacturer exporters revolve around the outbound logistics arena: Issues relating to vehicle routing, cargo handling, port management, multi-modal transit risk, containerisation, export-import documentation procedure-related challenges, customs clearance, packing credits, bank guarantees and letter of credit-related issues, insurance, unusual delay in tracking and tracing consignments, non-availability of necessary cold storage facilities in ports, infrequent shipping and above all unforeseen uncertainties and timely delivery of goods to the foreign customers.

4. Objectives of the Study

1. To examine the major determinants of logistics cost of manufacturer exporters of Dubai.
2. To suggest recommendations to the exporters and policymakers based on the present investigation.

5. Methodology

The present study is based on primary data. Manufacturers who export goods from Dubai have been the respondents of the study. For primary data collection, a well-structured interview schedule was given to the respondents to record their responses on the **significant determinants of** logistics **cost** adopted by the manufacturer exporters for reducing logistics costs. The study is based on a field survey with a structured interview schedule. The researcher personally met the manufacturer exporters to collect the required data. A proportionate random sampling technique has been adopted to select the respondents. A total of 9812 manufacturer exporters are available in Dubai. Out of which, the personal respondents met 262 manufacturer exporters. The data collected for the study was analysed using SPSS package version 26 and Microsoft Excel 2016, and in this paper, Analysis of variance, Post hoc test and Rank analysis were used.

6. Data Analysis and Interpretation of Data

(a) Major Determinants of Logistics Cost of Manufacturer Exporters

In this section, the major determinants of the logistic cost of the manufacturer exporters are studied in detail. There are two subsections, and in the first sub-section, the respondents' opinion on the determinants of the logistic costs based on their business profile is analysed using appropriate statistical tools. In the second subsection, the overall major determinants of the logistic cost of the manufacturer exporters, irrespective of the business profile, are found using descriptive statistics and ranking. In this sub-section, the first ANOVA is used to determine whether there is any difference in opinion among the different business groups (comparison of means recorded by the respondents). Then, a detailed rank analysis is carried out using the mean score obtained to identify the significant determinants of the logistic cost based on the business profile.

Table No 1 ANOVA – Opinion on the Determinants of Logistics Cost Based on Size of the Company

H_0: There is no significant difference in the determinants of logistic cost with respect to the size of the company.

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Nature of business	Between Groups	28.257	3	9.419	3.670	.013
	Within Groups	662.201	258	2.567		
	Total	690.458	261			
Size of company	Between Groups	4.220	3	1.407	.891	.446
	Within Groups	407.185	258	1.578		
	Total	411.405	261			
Human factor	Between Groups	2.072	3	.691	.408	.748
	Within Groups	437.184	258	1.695		
	Total	439.256	261			
Range of commodity	Between Groups	23.861	3	7.954	4.466	.004
	Within Groups	459.513	258	1.781		
	Total	483.374	261			
Property of product	Between Groups	2.572	3	.857	.568	.636
	Within Groups	389.218	258	1.509		
	Total	391.790	261			
Infrastructure	Between Groups	10.793	3	3.598	2.108	.100
	Within Groups	440.367	258	1.707		
	Total	451.160	261			
Tax and tariff	Between Groups	4.164	3	1.388	.850	.468
	Within Groups	421.302	258	1.633		
	Total	425.466	261			

Currency exchange	Between Groups	2.806	3	.935	.486	.692
	Within Groups	496.049	258	1.923		
	Total	498.855	261			
Customs clearance	Between Groups	8.024	3	2.675	1.291	.278
	Within Groups	534.434	258	2.071		
	Total	542.458	261			
Law and regulation	Between Groups	5.444	3	1.815	.727	.537
	Within Groups	644.011	258	2.496		
	Total	649.454	261			
Demand variability of logistic Services	Between Groups	4.943	3	1.648	.859	.463
	Within Groups	494.752	258	1.918		
	Total	499.695	261			
Cultural difference in payment, delivery and corporate culture	Between Groups	3.507	3	1.169	.581	.628
	Within Groups	518.844	258	2.011		
	Total	522.351	261			
Application of information and communication technology	Between Groups	4.441	3	1.480	.808	.491
	Within Groups	472.887	258	1.833		
	Total	477.328	261			
Cost of ICT	Between Groups	10.292	3	3.431	1.846	.139
	Within Groups	479.525	258	1.859		
	Total	489.817	261			
Warehouse and inventory management	Between Groups	4.579	3	1.526	.812	.488
	Within Groups	484.993	258	1.880		
	Total	489.573	261			
Inventory model	Between Groups	1.167	3	.389	.224	.880
	Within Groups	448.283	258	1.738		
	Total	449.450	261			
One-stop service	Between Groups	5.097	3	1.699	.966	.409
	Within Groups	453.900	258	1.759		
	Total	458.996	261			

Service capacity	Between Groups	4.749	3	1.583	.761	.517
	Within Groups	536.522	258	2.080		
	Total	541.271	261			
Alliance and cooperation	Between Groups	23.161	3	7.720	4.400	.005
	Within Groups	452.671	258	1.755		
	Total	475.832	261			
Real-time information sharing	Between Groups	3.365	3	1.122	.538	.657
	Within Groups	537.814	258	2.085		
	Total	541.179	261			
Outscoring strategy	Between Groups	2.145	3	.715	.475	.700
	Within Groups	388.378	258	1.505		
	Total	390.523	261			

Source: Primary data

The estimated significance value of almost all the statements reveals that the respondents agree about the determinants of the logistics cost since the calculated significance value is greater than 0.05, implying that the null hypothesis is accepted except for three determinants, namely, Nature of business [0.013], Range of commodity [0.004], Alliance and cooperation [0.005]wherein the calculated p-value is less than 0.05 implying the null hypothesis rejected. This implies that the respondents significantly differ in opinion concerning these determinants. The rank analysis is performed to identify the major determinants based on the company's size.

Table No 2 –Determinants of Logistics Cost Based on Size of the Company

Determinants of Logistics Cost	**50-100**		**100-300**		**300-500**		**More than 500**	
	Mean	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**
Nature of business	3.65	1	2.71	21	3.24	13	3.4	11
Size of company	3.6	2	3.32	7	3.59	4	3.6	3
Human factor	3.44	6	3.42	4	3.61	2	3.6	3
Range of commodity	3.14	16	2.99	18	3.18	15	3.83	1
Property of product	3.3	13	3.03	16	3.05	20	3.17	16
Infrastructure	2.86	20	3.18	13	3.25	11	3.53	6
Tax and tariff	3.58	3	3.32	7	3.61	2	3.43	10
Currency exchange	3.49	5	3.51	2	3.51	5	3.25	13
Customs clearance	2.86	20	3.12	15	3.37	7	3.25	13
Law and regulation	3.23	14	2.99	18	3.29	9	3.36	12
Demand variability of logistic Services	3.58	3	3.21	10	3.29	9	3.47	8

Cultural difference in payment, delivery and corporate culture	3.33	11	3.38	6	3.25	11	3.06	19
Application of information and communication technology	3.33	11	3.41	5	3.12	18	3.13	18
Cost of ICT	3.23	14	3.19	11	3.65	1	3.49	7
Warehouse and inventory management	3.35	10	3.19	11	3.46	6	3.15	17
Inventory model	2.95	18	3	17	3.13	17	3.04	20
One-stop service	2.88	19	2.88	20	3.18	15	2.92	21
Service capacity	3.42	8	3.15	14	3.03	21	3.25	13
Alliance and cooperation	3.14	16	3.6	1	3.09	19	3.79	2
Real-time information sharing	3.44	7	3.25	9	3.19	14	3.45	9
Outscoring strategy	3.37	9	3.45	3	3.37	7	3.6	3

Source: *Primary data*

The major determinants of logistics costs based on the size of the company are given below.**50-100 employees:** With respect to this group, the major logistics costs are as follows: Nature of business [Mean: 3.65; Rank:1], Size of company [Mean: 3.6; Rank:2], Tax and tariff [Mean: 3.45; Rank: 3], Demand variability of logistic services[Mean: 3.58; Rank: 3], and Currency exchange[Mean: 3.49; Rank:5]. **100-300 employees:** Concerning this group, the major logistics costs are as follows: Alliance and cooperation [Mean: 3.6; Rank:1], Human factor [Mean: 3.51; Rank:2], Tax and tariff [Mean: 3.58; Rank: 3], Human factor [Mean: 3.42; Rank: 3], and Application of information and communication technology [Mean: 3.41; Rank:5]. **300-500 employees:** With respect to this group, the major logistics costs are as follows: Cost of ICT [Mean: 3.65; Rank:1], Size of company [Mean: 3.61; Rank:2], Tax and tariff [Mean: 3.61; Rank: 2], Demand Size of company [Mean: 3.59; Rank: 4], Currency exchange [Mean: 3.51; Rank:5]. **More than 500 employees:** Concerning this group, the major logistics costs are as follows: Range of commodity [Mean: 3.83; Rank:1], Alliance and cooperation [Mean: 3.79; Rank:2], Outscoring strategy [Mean: 3.6; Rank: 3], Size of company [Mean: 3.6; Rank: 3], Human factor [Mean: 3.6; Rank:3].

Table No 3 ANOVA – Opinion on the Determinants of Logistics Cost Based on Volume of Annual Sales

H_0: There is no significant difference in the determinants of logistic cost with respect to the volume of annual sales.

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Nature of business	Between Groups	8.788	4	2.197	.828	.508
	Within Groups	681.670	257	2.652		
	Total	690.458	261			
Size of company	Between Groups	4.502	4	1.125	.711	.585
	Within Groups	406.903	257	1.583		
	Total	411.405	261			

Human factor	Between Groups	7.418	4	1.855	1.104	.355
	Within Groups	431.838	257	1.680		
	Total	439.256	261			
Range of commodity	Between Groups	.904	4	.226	.120	.975
	Within Groups	482.470	257	1.877		
	Total	483.374	261			
Property of product	Between Groups	8.671	4	2.168	1.454	.217
	Within Groups	383.119	257	1.491		
	Total	391.790	261			
Infrastructure	Between Groups	5.715	4	1.429	.824	.511
	Within Groups	445.445	257	1.733		
	Total	451.160	261			
Tax and tariff	Between Groups	7.921	4	1.980	1.219	.303
	Within Groups	417.545	257	1.625		
	Total	425.466	261			
Currency exchange	Between Groups	10.138	4	2.534	1.333	.258
	Within Groups	488.717	257	1.902		
	Total	498.855	261			
Customs clearance	Between Groups	3.740	4	.935	.446	.775
	Within Groups	538.718	257	2.096		
	Total	542.458	261			
Law and regulation	Between Groups	19.192	4	4.798	1.956	.102
	Within Groups	630.262	257	2.452		
	Total	649.454	261			
Demand variability of logistic Services	Between Groups	6.175	4	1.544	.804	.524
	Within Groups	493.519	257	1.920		
	Total	499.695	261			
Cultural difference in payment, delivery and corporate culture	Between Groups	4.679	4	1.170	.581	.677
	Within Groups	517.672	257	2.014		
	Total	522.351	261			

Application of information and communication technology	Between Groups	13.462	4	3.366	1.865	.117
	Within Groups	463.866	257	1.805		
	Total	477.328	261			
Cost of ICT	Between Groups	7.528	4	1.882	1.003	.407
	Within Groups	482.289	257	1.877		
	Total	489.817	261			
Warehouse and inventory management	Between Groups	4.486	4	1.122	.594	.667
	Within Groups	485.086	257	1.887		
	Total	489.573	261			
Inventory model	Between Groups	4.110	4	1.027	.593	.668
	Within Groups	445.341	257	1.733		
	Total	449.450	261			
One-stop service	Between Groups	5.073	4	1.268	.718	.580
	Within Groups	453.924	257	1.766		
	Total	458.996	261			
Service capacity	Between Groups	3.791	4	.948	.453	.770
	Within Groups	537.480	257	2.091		
	Total	541.271	261			
Alliance and cooperation	Between Groups	5.537	4	1.384	.756	.555
	Within Groups	470.295	257	1.830		
	Total	475.832	261			
Real-time information sharing	Between Groups	5.534	4	1.383	.664	.618
	Within Groups	535.646	257	2.084		
	Total	541.179	261			
Outscoring strategy	Between Groups	8.262	4	2.065	1.389	.238
	Within Groups	382.261	257	1.487		
	Total	390.523	261			

Source: Primary data

By looking at the estimated significance value of all the statements, it is clear that the respondents agree about all the determinants of the logistics cost since the calculated significance value is greater than 0.05, implying that the null hypothesis is accepted. Therefore, it is revealed that there is no significant difference in opinion on the determinants of the logistics cost with respect to the volume of sales. Rank analysis is performed to identify the major determinants based on the sales volume.

Table No 4 Rank Analysis – Determinants of Logistics Cost Based on Volume of Annual Sales

Determinants of Logistics Cost	Less than AED 1 million		AED 1 to 5 million		AED 5 to 10 million		AED 10 to 25 million		Above AED 25 million	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Nature of business	3.42	9	3.46	6	3.22	15	3.01	19	3.02	19
Size of company	3.85	1	3.6	5	3.42	5	3.41	5	3.54	6
Human factor	3.69	5	3.24	13	3.69	1	3.46	4	3.63	1
Range of commodity	3.38	12	3.3	9	3.25	14	3.19	14	3.23	12
Property of product	2.69	21	3	20	3.16	17	3.11	16	3.37	8
Infrastructure	3.42	9	3.36	7	3.33	9	3.07	17	3.06	17
Tax and tariff	3.08	16	3.7	1	3.38	7	3.54	2	3.56	4
Currency exchange	3.73	2	3.68	2	3.33	9	3.21	13	3.56	4
Customs clearance	3.46	7	3.04	19	3.11	20	3.24	11	3.23	12
Law and regulation	3	18	3.62	4	3.28	11	3.24	11	2.79	21
Demand variability of logistic Services	3.73	2	3.3	9	3.45	3	3.26	10	3.21	14
Cultural difference in payment, delivery and corporate culture	2.88	19	3.22	14	3.28	11	3.33	8	3.37	8
Application of information and communication technology	3.35	13	2.78	21	3.28	11	3.34	7	3.42	7
Cost of ICT	3.58	6	3.26	11	3.2	16	3.56	1	3.58	3
Warehouse and inventory management	3.31	14	3.36	7	3.5	2	3.19	14	3.17	16
Inventory model	3.08	16	3.2	15	3.13	19	2.86	21	3.04	18
One-stop service	2.81	20	3.26	11	2.98	21	2.9	20	2.98	20
Service capacity	3.42	9	3.08	17	3.14	18	3.07	17	3.31	10
Alliance and cooperation	3.46	7	3.16	16	3.36	8	3.36	6	3.62	2
Real-time information sharing	3.23	15	3.08	17	3.39	6	3.47	3	3.21	14
Outscoring strategy	3.73	2	3.68	2	3.44	4	3.27	9	3.29	11

Source: Primary data

The major determinants of logistics costs based on annual sales volume are given below. **Less than AED 1 million:** With respect to this group, the major logistics costs are as follows: Size of company [Mean: 3.85; Rank:1], Currency exchange [Mean: 3.73; Rank:2], Demand variability of logistic Services [Mean: 3.73; Rank: 2], Outscoring strategy [Mean: 3.73; Rank: 2], and Human factor [Mean: 3.69; Rank:5]. **AED 1 to 5 million:** With respect to this group, the major logistics costs are as follows: Tax and tariff [Mean: 3.7; Rank:1], Currency exchange [Mean: 3.68; Rank:2], Outscoring strategy [Mean: 3.68; Rank: 2], Human factor [Mean: 3.62; Rank: 4], and Size of company [Mean: 3.6; Rank:5]. **AED 5 to 10 million:** With respect to this group, the major logistics costs are as follows: Human factor [Mean: 3.69; Rank:1], Warehouse and inventory management [Mean: 3.5; Rank:2], Demand variability of logistic Services [Mean: 3.45; Rank: 3], Outscoring strategy [Mean: 3.44; Rank: 4], Size of company [Mean: 3.42; Rank:5]. **AED 10 to 25 million:** With respect to this group, the major logistics costs are as follows: Cost of ICT [Mean: 3.56; Rank:1], Tax and tariff [Mean: 3.54; Rank:2], Real-time information sharing [Mean: 3.47; Rank: 3], Human factor [Mean: 3.46; Rank: 4], Size of company [Mean: 3.41; Rank:5]. **Above AED 25 million:** With respect to this group, the major logistics costs are as follows: Human factor [Mean: 3.63; Rank:1], Alliance and cooperation [Mean: 3.62; Rank:2], Cost of ICT [Mean: 3.58; Rank: 3], Tax and tariff [Mean: 3.56; Rank: 4], Currency exchange [Mean: 3.56; Rank:4].

Table No 5 ANOVA – Opinion on the Determinants of Logistics Cost Based on Years of Experience

H_0: There is no significant difference in the determinants of logistic cost with respect to years of experience in exports.

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Nature of business	Between Groups	4.484	2	2.242	.846	.430
	Within Groups	685.974	259	2.649		
	Total	690.458	261			
Size of company	Between Groups	2.820	2	1.410	.894	.410
	Within Groups	408.584	259	1.578		
	Total	411.405	261			
Human factor	Between Groups	10.910	2	5.455	3.298	.039
	Within Groups	428.346	259	1.654		
	Total	439.256	261			
Range of commodity	Between Groups	1.282	2	.641	.344	.709
	Within Groups	482.092	259	1.861		
	Total	483.374	261			
Property of product	Between Groups	.779	2	.390	.258	.773
	Within Groups	391.011	259	1.510		
	Total	391.790	261			
Infrastructure	Between Groups	.082	2	.041	.023	.977
	Within Groups	451.079	259	1.742		
	Total	451.160	261			
Tax and tariff	Between Groups	.255	2	.127	.078	.925
	Within Groups	425.211	259	1.642		
	Total	425.466	261			

Currency exchange	Between Groups	1.154	2	.577	.300	.741
	Within Groups	497.701	259	1.922		
	Total	498.855	261			
Customs clearance	Between Groups	1.052	2	.526	.252	.778
	Within Groups	541.406	259	2.090		
	Total	542.458	261			
Law and regulation	Between Groups	8.246	2	4.123	1.665	.191
	Within Groups	641.208	259	2.476		
	Total	649.454	261			
Demand variability of logistic Services	Between Groups	.134	2	.067	.035	.966
	Within Groups	499.561	259	1.929		
	Total	499.695	261			
Cultural difference in payment, deliveryand corporate culture	Between Groups	.625	2	.313	.155	.856
	Within Groups	521.726	259	2.014		
	Total	522.351	261			
Application of information and communication technology	Between Groups	5.460	2	2.730	1.498	.225
	Within Groups	471.869	259	1.822		
	Total	477.328	261			
Cost of ICT	Between Groups	1.073	2	.536	.284	.753
	Within Groups	488.744	259	1.887		
	Total	489.817	261			
Warehouse and inventory management	Between Groups	1.032	2	.516	.274	.761
	Within Groups	488.541	259	1.886		
	Total	489.573	261			
Inventory model	Between Groups	2.030	2	1.015	.588	.556
	Within Groups	447.420	259	1.727		
	Total	449.450	261			
One-stop service	Between Groups	3.368	2	1.684	.957	.385
	Within Groups	455.628	259	1.759		
	Total	458.996	261			
Service capacity	Between Groups	.496	2	.248	.119	.888
	Within Groups	540.775	259	2.088		
	Total	541.271	261			
Alliance and cooperation	Between Groups	.230	2	.115	.063	.939
	Within Groups	475.602	259	1.836		
	Total	475.832	261			

Real-time information sharing	Between Groups	3.140	2	1.570	.756	.471
	Within Groups	538.039	259	2.077		
	Total	541.179	261			
Outscoring strategy	Between Groups	4.312	2	2.156	1.446	.237
	Within Groups	386.211	259	1.491		
	Total	390.523	261			

Source: Primary data

The estimated significance value of all the statements reveals that the respondents agree about the determinants of the logistics cost since the calculated significance value is greater than 0.05, implying that the null hypothesis is accepted except for one particular determinant, namely, Human factor [0.039], wherein the calculated p-value is less than 0.05 implying the null hypothesis rejected. This implies that the respondents significantly differ in opinion concerning this particular determinant. The rank analysis is performed to identify the major determinants based on the company's years of experience in exports.

Table No 6 Rank Analysis – Determinants of logistics cost based on years of experience

Determinants of Logistics Cost	Below 5 years		5 to 10 years		Above 10 years	
	Mean	Rank	Mean	Rank	Mean	Rank
Nature of business	3.02	19	3.17	17	3.37	7
Size of company	3.7	1	3.48	4	3.43	4
Human factor	3.54	2	3.71	1	3.23	11
Range of commodity	3.37	8	3.24	12	3.17	15
Property of product	3.21	13	3.07	18	3.09	20
Infrastructure	3.19	16	3.23	15	3.23	11
Tax and tariff	3.49	3	3.46	5	3.53	1
Currency exchange	3.48	4	3.5	3	3.35	8
Customs clearance	3.21	13	3.24	12	3.09	20
Law and regulation	3.29	12	3.03	20	3.44	3
Demand variability of logistic Services	3.33	10	3.34	9	3.39	5
Cultural difference in payment, delivery and corporate culture	3.21	13	3.24	12	3.33	9
Application of information and communication technology	3.03	18	3.38	7	3.17	15
Cost of ICT	3.32	11	3.43	6	3.49	2
Warehouse and inventory management	3.38	7	3.32	10	3.21	13
Inventory model	2.9	21	3.06	19	3.15	18
One-stop service	2.95	20	2.91	21	3.17	15
Service capacity	3.1	17	3.2	16	3.19	14
Alliance and cooperation	3.43	6	3.35	8	3.39	5
Real-time information sharing	3.44	5	3.32	10	3.15	18
Outscoring strategy	3.35	9	3.57	2	3.29	10

Source: Primary data

The major determinants of logistics costs faced by companies with years of experience are given below. **Below 5 years:** With respect to this group, the major logistics costs are as follows: Size of company [Mean: 3.7; Rank:1], Human factor [Mean: 3.54; Rank:2], Tax and tariff [Mean: 3.49; Rank: 3], Currency exchange [Mean: 3.48; Rank: 4], and Real-time information sharing [Mean: 3.44; Rank:5].**5 to 10 years:** Concerning this group, the major logistics costs are as follows: Human factor [Mean: 3.71; Rank:1], Outscoring strategy [Mean: 3.57; Rank:2], Currency exchange [Mean: 3.5; Rank: 3], Size of company [Mean: 3.48; Rank: 4], and Tax and tariff [Mean: 3.46; Rank:5]. **Above 10 years:** With respect to this group, the major logistics costs are as follows: Tax and tariff [Mean: 3.53; Rank:1], Cost of ICT [Mean: 3.49; Rank:2], Law and regulation [Mean: 3.44; Rank: 3], Size of company [Mean: 3.43; Rank: 4], Demand variability of logistic Services [Mean: 3.39; Rank:5].

Table No 7 ANOVA – Opinion on the Determinants of Logistics Cost Based on the Type of Industry

H_0: There is no significant difference in the determinants of logistic cost with respect to the type of industry.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Nature of business	Between Groups	11.049	4	2.762	1.045	.385
	Within Groups	679.409	257	2.644		
	Total	690.458	261			
Size of company	Between Groups	4.694	4	1.173	.741	.564
	Within Groups	406.711	257	1.583		
	Total	411.405	261			
Human factor	Between Groups	7.113	4	1.778	1.058	.378
	Within Groups	432.142	257	1.681		
	Total	439.256	261			
Range of commodity	Between Groups	3.728	4	.932	.499	.736
	Within Groups	479.646	257	1.866		
	Total	483.374	261			
Property of product	Between Groups	4.896	4	1.224	.813	.518
	Within Groups	386.894	257	1.505		
	Total	391.790	261			
Infrastructure	Between Groups	3.163	4	.791	.454	.770
	Within Groups	447.998	257	1.743		
	Total	451.160	261			
Tax and tariff	Between Groups	6.816	4	1.704	1.046	.384
	Within Groups	418.649	257	1.629		
	Total	425.466	261			
Currency exchange	Between Groups	13.122	4	3.281	1.736	.143
	Within Groups	485.733	257	1.890		
	Total	498.855	261			
Customs clearance	Between Groups	2.080	4	.520	.247	.911
	Within Groups	540.378	257	2.103		
	Total	542.458	261			

Law and regulation	Between Groups	17.396	4	4.349	1.768	.136
	Within Groups	632.059	257	2.459		
	Total	649.454	261			
Demand variability of logistic Services	Between Groups	2.969	4	.742	.384	.820
	Within Groups	496.726	257	1.933		
	Total	499.695	261			
Cultural difference in payment, delivery and corporate culture	Between Groups	2.131	4	.533	.263	.901
	Within Groups	520.220	257	2.024		
	Total	522.351	261			
Application of information and communication technology	Between Groups	17.562	4	4.390	2.454	.046
	Within Groups	459.766	257	1.789		
	Total	477.328	261			
Cost of ICT	Between Groups	6.197	4	1.549	.823	.511
	Within Groups	483.619	257	1.882		
	Total	489.817	261			
Warehouse and inventory management	Between Groups	4.362	4	1.091	.578	.679
	Within Groups	485.210	257	1.888		
	Total	489.573	261			
Inventory model	Between Groups	4.229	4	1.057	.610	.656
	Within Groups	445.221	257	1.732		
	Total	449.450	261			
One-stop service	Between Groups	4.151	4	1.038	.586	.673
	Within Groups	454.846	257	1.770		
	Total	458.996	261			
Service capacity	Between Groups	7.592	4	1.898	.914	.456
	Within Groups	533.679	257	2.077		
	Total	541.271	261			
Alliance and cooperation	Between Groups	.527	4	.132	.071	.991
	Within Groups	475.306	257	1.849		
	Total	475.832	261			
Real-time information sharing	Between Groups	6.200	4	1.550	.745	.562
	Within Groups	534.979	257	2.082		
	Total	541.179	261			
Outscoring strategy	Between Groups	8.610	4	2.153	1.449	.218
	Within Groups	381.912	257	1.486		
	Total	390.523	261			

Source: Primary data

By looking at the estimated significance value of all the statements, it is clear that the respondents agree about almost all the determinants of the logistics cost since the calculated significance value is greater than 0.05, implying that the null hypothesis is accepted except for the Application of information and communication technology [0.046] wherein p-value is less than 0.05.

Table No 8 Rank Analysis – Determinants of Logistics Cost Based on Type of Industry

Determinants of Logistics Cost	Minerals		Gems		Plastics		Electricals		Others	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Nature of business	3.47	5	3.35	7	3.25	14	2.96	19	2.88	20
Size of company	3.72	2	3.60	3	3.43	3	3.37	5	3.65	2
Human factor	3.44	7	3.31	10	3.72	1	3.49	3	3.77	1
Range of commodity	3.44	7	3.36	6	3.18	18	3.19	14	3.08	14
Property of product	2.84	20	3.07	20	3.19	16	3.16	16	3.31	8
Infrastructure	3.23	16	3.33	8	3.32	10	3.09	18	3.08	14
Tax and tariff	3.35	12	3.75	2	3.38	7	3.56	1	3.27	10
Currency exchange	3.88	1	3.53	4	3.38	7	3.20	13	3.42	5
Customs clearance	3.35	12	3.09	19	3.13	19	3.24	12	3.15	12
Law and regulation	2.67	21	3.47	5	3.32	10	3.26	9	3.12	13
emand variability of logistic Services	3.53	4	3.27	12	3.43	3	3.26	9	3.27	10
Cultural difference in payment, delivery and corporate culture	3.16	17	3.24	13	3.31	12	3.36	6	3.08	14
Application of information and communication technology	3.47	6	2.75	21	3.31	12	3.34	8	3.42	5
Cost of ICT	3.58	3	3.31	10	3.22	15	3.54	2	3.58	3
Warehouse and inventory management	3.26	14	3.24	13	3.50	2	3.17	15	3.38	7
Inventory model	3.07	18	3.20	17	3.12	20	2.86	20	3.00	18
One-stop service	2.95	19	3.22	16	2.99	21	2.86	20	3.00	18
Service capacity	3.40	11	3.24	13	3.19	16	3.13	17	2.73	21
Alliance and cooperation	3.44	7	3.33	8	3.38	7	3.36	6	3.46	4
Real-time information sharing	3.26	14	3.13	18	3.40	6	3.47	4	3.04	17
Outscoring strategy	3.44	7	3.76	1	3.41	5	3.26	9	3.31	8

Source: Primary data

The major determinants of logistics costs faced by the respondents concerning the type of industry are given below. **Minerals:** With respect to this group, the major logistics costs are as follows: Currency exchange [Mean: 3.88; Rank:1], Size of company [Mean: 3.72; Rank:2], Cost of ICT [Mean: 3.58; Rank: 3], Demand variability of logistic Services [Mean: 3.53; Rank: 4], and Nature of business [Mean: 3.47; Rank:5]. **Gems:** With respect to this group, the major logistics costs are as follows: Outscoring strategy [Mean: 3.76; Rank:1], Tax and tariff [Mean: 3.75; Rank:2], Size of company [Mean: 3.60; Rank: 3], Currency exchange [Mean: 3.53; Rank: 4], and Law and regulation [Mean: 3.47; Rank:5]. **Plastics:** With respect to this group, the major logistics costs are as follows: Human factor [Mean: 3.72; Rank:1], Warehouse and inventory management [Mean: 3.50; Rank:2], Size of company [Mean: 3.43; Rank: 3], A Demand variability of logistic Services [Mean: 3.43; Rank: 3], and Outscoring strategy [Mean: 3.41; Rank:5]. **Electricals:** With respect to this group, the major logistics costs are as follows: Tax and tariff [Mean: 3.56; Rank:1], Cost of ICT [Mean: 3.54; Rank:2], The Human factor [Mean: 3.49; Rank: 3], Real-time information sharing [Mean: 3.47; Rank: 4], and Size of company [Mean: 3.37; Rank:5]. **Others:** With respect to this group, the major logistics costs are as follows: Human factor

[Mean: 3.77; Rank:1], Size of company [Mean: 3.65; Rank:2], Cost of ICT [Mean: 3.58; Rank: 3], Alliance and cooperation [Mean: 3.46; Rank: 4], and Application of information and communication technology [Mean: 3.42; Rank:5]

Table No 9 ANOVA – Opinion on the Determinants of Logistics Cost Based on Export Destination

H_0: There is no significant difference in the determinants of logistic cost with respect to the export destination.

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Nature of business	Between Groups	1.256	4	.314	.117	.976
	Within Groups	689.202	257	2.682		
	Total	690.458	261			
Size of company	Between Groups	1.987	4	.497	.312	.870
	Within Groups	409.418	257	1.593		
	Total	411.405	261			
Human factor	Between Groups	11.368	4	2.842	1.707	.149
	Within Groups	427.888	257	1.665		
	Total	439.256	261			
Range of commodity	Between Groups	5.537	4	1.384	.744	.563
	Within Groups	477.838	257	1.859		
	Total	483.374	261			
Property of product	Between Groups	3.963	4	.991	.657	.623
	Within Groups	387.827	257	1.509		
	Total	391.790	261			
Infrastructure	Between Groups	12.432	4	3.108	1.821	.125
	Within Groups	438.728	257	1.707		
	Total	451.160	261			
Tax and tariff	Between Groups	3.364	4	.841	.512	.727
	Within Groups	422.101	257	1.642		
	Total	425.466	261			
Currency exchange	Between Groups	11.093	4	2.773	1.461	.214
	Within Groups	487.762	257	1.898		
	Total	498.855	261			
Customs clearance	Between Groups	.480	4	.120	.057	.994
	Within Groups	541.978	257	2.109		
	Total	542.458	261			
Law and regulation	Between Groups	2.121	4	.530	.211	.932
	Within Groups	647.333	257	2.519		
	Total	649.454	261			
Demand variability of logistic Services	Between Groups	7.766	4	1.942	1.014	.400
	Within Groups	491.928	257	1.914		
	Total	499.695	261			

Cultural difference in payment, deliveryand corporate culture	Between Groups	2.940	4	.735	.364	.834
	Within Groups	519.411	257	2.021		
	Total	522.351	261			
Application of information and communication technology	Between Groups	5.164	4	1.291	.703	.591
	Within Groups	472.165	257	1.837		
	Total	477.328	261			
Cost of ICT	Between Groups	.933	4	.233	.123	.974
	Within Groups	488.884	257	1.902		
	Total	489.817	261			
Warehouse and inventory management	Between Groups	7.604	4	1.901	1.014	.401
	Within Groups	481.969	257	1.875		
	Total	489.573	261			
Inventory model	Between Groups	1.672	4	.418	.240	.916
	Within Groups	447.779	257	1.742		
	Total	449.450	261			
One-stop service	Between Groups	3.744	4	.936	.528	.715
	Within Groups	455.252	257	1.771		
	Total	458.996	261			
Service capacity	Between Groups	4.410	4	1.102	.528	.715
	Within Groups	536.861	257	2.089		
	Total	541.271	261			
Alliance and cooperation	Between Groups	7.368	4	1.842	1.010	.402
	Within Groups	468.464	257	1.823		
	Total	475.832	261			
Real-time information sharing	Between Groups	6.892	4	1.723	.829	.508
	Within Groups	534.287	257	2.079		
	Total	541.179	261			
Outscoring strategy	Between Groups	8.310	4	2.078	1.397	.235
	Within Groups	382.212	257	1.487		
	Total	390.523	261			

Source: Primary data

The estimated significance value of all the statements reveals that the respondents agree about all the determinants of the logistics cost since the calculated significance value is greater than 0.05, implying that the null hypothesis is accepted. This implies that the respondents agree regarding the determinants of logistics cost based on the export destination, revealing that the export destination does not affect the logistics costs.

Table No 10 Rank Analysis – Determinants of logistics cost based on export destination

Determinants of Logistics Cost	North America		South America		Europe		Asia		Others	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Nature of business	3.23	10	3.2	17	3.09	17	3.17	14	3.29	9
Size of company	3.58	2	3.52	3	3.36	6	3.58	2	3.58	3
Human factor	3.19	11	3.26	14	3.78	1	3.57	3	3.65	1
Range of commodity	3.54	3	3.43	8	3.19	11	3.17	14	3.11	14
Property of product	3.15	13	3.31	12	3.1	16	2.96	21	3.09	16
Infrastructure	2.96	19	3.48	6	2.95	19	3.17	14	3.44	6
Tax and tariff	3.54	3	3.48	6	3.29	9	3.54	4	3.62	2
Currency exchange	4	1	3.5	4	3.41	4	3.42	8	3.22	11
Customs clearance	3.15	13	3.15	20	3.16	13	3.22	12	3.25	10
Law and regulation	3.38	6	3.3	13	3.09	17	3.19	13	3.2	12
Demand variability of logistic Services	3.12	15	3.54	2	3.16	13	3.3	11	3.55	4
Cultural difference in payment, delivery and corporate culture	3.08	16	3.35	10	3.12	15	3.32	10	3.33	8
Application of information and communication technology	3.35	8	3.43	8	3.31	8	3.13	18	3.05	19
Cost of ICT	3.38	6	3.5	4	3.33	7	3.45	6	3.42	7
Warehouse and inventory management	3.08	16	3.33	11	3.41	4	3.48	5	3.05	19
Inventory model	2.96	19	3.06	21	2.93	20	3.14	17	3.07	18
One-stop service	2.73	21	3.17	19	2.93	20	2.99	20	3.04	21
Service capacity	3.5	5	3.24	16	3.17	12	3.04	19	3.11	14
Alliance and cooperation	3.35	8	3.67	1	3.28	10	3.42	8	3.18	13
Real-time information sharing	3.19	11	3.19	18	3.48	2	3.45	6	3.09	16
Outscoring strategy	3.08	16	3.26	14	3.45	3	3.64	1	3.53	5

Source: Primary data

The major determinants of logistics costs faced concerning export destinations are given below. **North America:** With respect to this group, the major logistics costs are as follows: Currency exchange [Mean: 4; Rank:1], Size of company [Mean: 3.58; Rank:2], Range of commodity [Mean: 3.54; Rank: 3], Tax and tariff [Mean: 3.54; Rank: 3], and Service capacity [Mean: 3.5; Rank:5]. **South America:** With respect to this group, the major logistics costs are as follows: Alliance and cooperation [Mean: 3.67; Rank:1], Demand variability of logistic Services [Mean: 3.54; Rank:2], Outscoring strategy [Mean: 3.52; Rank: 3], Currency exchange [Mean: 3.5; Rank: 4], and Cost of ICT [Mean: 3.5; Rank: 4]. **Europe:** With respect to this group, the major logistics costs are as follows: Human factor [Mean: 3.78; Rank:1], Real-time information sharing [Mean: 3.48; Rank:2], Outscoring strategy [Mean: 3.45; Rank: 3], Currency exchange [Mean: 3.41; Rank: 4], and Warehouse and inventory management [Mean: 3.41; Rank:4]. **Asia:** With respect to this group, the major logistics costs are as follows: Outscoring strategy [Mean: 3.64; Rank:1], Size of company [Mean: 3.58; Rank:2], Human factor [Mean: 3.57; Rank: 3], Tax and tariff [Mean: 3.54; Rank: 4], and Warehouse and inventory management [Mean: 3.48; Rank:5]. **Others:** With respect to this group, the major logistics costs are as follows: Human factor [Mean: 3.65; Rank:1], Tax and tariff [Mean: 3.62; Rank:2], Size of company [Mean: 3.58; Rank: 3], Demand variability of logistic Services [Mean: 3.55; Rank: 4], and Outscoring strategy [Mean: 3.53; Rank:5].

Major Determinants of the Logistic Costs Irrespective Business Profile (Overall)

Table No 11 Descriptive Statistics – Major Determinants of Logistics Cost

Determinants of Logistics Cost	N	Mean	Std. Deviation	Rank
Nature of business	262	3.19	1.626	17
Size of company	262	3.52	1.255	2
Human factor	262	3.53	1.297	1
Range of commodity	262	3.25	1.361	12
Property of product	262	3.11	1.225	19
Infrastructure	262	3.22	1.315	14
Tax and tariff	262	3.49	1.277	3
Currency exchange	262	3.45	1.383	4
Customs clearance	262	3.19	1.442	16
Law and regulation	262	3.21	1.577	15
Demand variability of logistic Services	262	3.35	1.384	8
Cultural difference in payment, delivery and corporate culture	262	3.26	1.415	11
Application of information and communication technology	262	3.24	1.352	13
Cost of ICT	262	3.42	1.370	6
Warehouse and inventory management	262	3.31	1.370	9
Inventory model	262	3.05	1.312	20
One-stop service	262	3.00	1.326	21
Service capacity	262	3.17	1.440	18
Alliance and cooperation	262	3.38	1.350	7
Real-time information sharing	262	3.30	1.440	10
Outscoring strategy	262	3.44	1.223	5

Source: Primary data

The previous subsection has already given a detailed understanding concerning the determinants of the logistics cost of the manufacturer exporters based on the business profile. Now, the major determinants of logistics cost of manufacturer exporters across business profiles are the following: Human factor [Mean: 3.53; Rank:1], Size of company [Mean: 3.52; Rank:2], Tax and tariff [Mean: 3.49; Rank: 3], Currency exchange [Mean: 3.45; Rank: 4], Outscoring strategy [Mean: 3.44; Rank: 5], Cost of ICT [Mean: 3.42; Rank: 6], and Alliance and cooperation [Mean: 3.38; Rank: 7].

Conclusion

This paper will help identify the major determinants of the logistics cost concerning the industry, thereby enabling the readers to understand the logistics cost determinant comprehensively. Exporters should consider the adoption of artificial intelligence and machine learning to automate the logistics system, which, in turn, will enhance its operational performance. Also, automation will lead to a reduction in inventory and an increase in the efficiency of the logistics system. Another major determinant of the logistics cost structure is the foreign exchange reserves. Hence, companies in international trade should engage in some form of arrangement, such as a memorandum with clients abroad, to eliminate the risks associated with foreign

exchange. Regulating, automating and optimizing manual processes can reduce staff requirements, centralize production operations to lower-cost areas and create a more proactive approach to ensuring customer satisfaction, all while providing scale and controlling costs. With an automated, cost-effective transportation and logistics system, a company can implement significant strategic changes to provide visibility, reduce costs and increase customer service. Plus, the emergence of cloud-based technologies has made this considerably easier/more affordable than ever, so even small companies can take advantage.

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Article

Assessing Perceived Service Quality in the Life Insurance Sector: A Study of Policyholders

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Abstract

With the liberalisation and introduction of reforms in the financial services sector in the past few decades and the advent of digital technology, the life insurance sector has become extremely competitive. To survive in this competitive market, companies have directed their policies and strategies towards customer satisfaction which can be achieved by improving service quality. In many earlier studies in different sectors, it has been found that service quality is the driver and one of the most significant determinants of customer satisfaction. This study aims to develop a reliable and valid scale for measuring service quality in the life insurance sector as perceived by the policyholders and the overall service quality of the life insurance sector. An empirical research design has been used for the study. The data has been collected using an online questionnaire from life insurance policyholders. The questionnaire is based on the SERVPERF scale modified for the life insurance sector. Descriptive statistics, Cronbach alpha for reliability analysis and exploratory factor analysis using principal component analysis with varimax rotation including KMO and Bartlett's test have been used for analysis. As a result of this study, a reliable four-dimensional scale has been developed for the measurement of service quality of the life insurance sector as perceived by the policyholders. consisting of dimensions Assurance & Tangibles, Convenience, Competence and Technology & Innovation. The performance scores have revealed that there is room for improvement in every aspect of service quality of life insurance companies.

Keywords: *Service quality, life insurance, perceived service quality, exploratory factor analysis, service quality dimensions.*

ABSTRACT

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1. Introduction

Like many other industries in the financial services sector, the life insurance industry is also experiencing heavy competition and unprecedented challenges. Insurance sector reforms, increased demands of customers, emerging technologies, the changing insurance market, the rise of Insurance and Fin-Tech companies, and the global COVID-19 pandemic have forced life insurance companies to restructure their business strategies to become more customer-oriented and stand out from their competitors.

In the life insurance business, policyholders are their most important asset. Therefore, policyholders' satisfaction should be the top priority for every life insurance company. However, it is generally observed that policyholders are unsatisfied with their life insurers, evidenced by India's high policy lapse rate. In today's market, the best way to satisfy customers is by delivering value through the quality of services. The business strategies of the life insurers need to be directed towards improving their service quality. For this, knowledge of various factors that affect the perception of the policyholders regarding service quality is of utmost significance.

Apart from being a means to customer satisfaction, improving service quality can also be a way to achieve a competitive advantage in the life insurance market. Since all the life insurers offer policies with equivalent or similar terms and conditions, service quality can be a reasonable basis for differentiation. The life insurer with better service quality will have a competitive advantage. Thus, service quality is a key to success for life insurance companies in today's competitive market.

2. Theoretical Observations

2.1 Concept of Service Quality

In the past few decades, a considerable amount of research has been conducted on various aspects of service quality, providing a robust conceptual foundation for researchers and practitioners. Service quality, a subjective concept, is difficult to define and evaluate (Parasuraman *et al.*, 1985). Different researchers have given various definitions of service quality over the years.

Parasuraman et al. (1988) defined *service quality* as a global judgement or attitude relating to service superiority. According to Bitner *et al.* (1990), service quality is the customer's overall impression of the relative inferiority/superiority of the organisation and its services. It can also be defined as consumers' assessment of the overall excellence or superiority of the service (Zeithaml *et al.*, 1993). The relative comparison of past and present service experience and composite evaluation is 'perceived service quality' (Gronroos, 1984; Parasuraman *et al.*, 1985). Perceived service quality is an overall judgment of a service that contributes to a range of positive outcomes for a firm (Cronin & Taylor, 1992).

In simpler terms, service quality can be better understood as the evaluation of how effectively and efficiently service providers deliver on the specific standards they have promised to meet, as well as meeting or surpassing the expectations of their customers.

SERVQUAL (Parasuraman *et al.*, 1985) and SERVPERF (Cronin & Taylor, 1992) are the most widely used service quality measurement tools. The SERVQUAL scale measures service quality based on the difference between expectations and performance perceptions of customers using 22 items and five dimensions: reliability, responsiveness, empathy, assurance, and tangibles. In the SERVPERF scale, service quality is operationalised through performance-only scores based on the same 22 items and the five-dimensional structure of SERVQUAL. SERVPERF is a performance-based scale with more theoretical superiority than the SERVQUAL model. However, it is still a matter of debate as to which model is superior in all aspects.

2.2 Service Quality in Life Insurance Sector

Life insurers provide credence services, making it difficult for consumers to evaluate their quality due to limited tangible indicators. In the case of such services, consumers often rely on extrinsic cues, such as brand image, to assess and perceive the level of service quality delivered (Gronroos, 1984). This reliance on extrinsic cues becomes particularly important for "pure" services like insurance, where there are minimal tangible indicators of quality and where the nature of transactions heavily relies on building and maintaining relationships. Additionally, the absence of clear price signals in the insurance

market further hinders consumers from relying solely on price as an extrinsic cue to determine service quality (Siddiqui & Sharma, 2010b).

Since life insurance is a long-term relationship between the insurer and the policyholder, its purchase does not reflect any immediate significant post-purchase service quality experience. Due to the amount invested and risks covered under life insurance, policyholders seek insurers to provide better services. Studies have shown that insurers sell most life insurance policies through agents. Hence, the behaviour and knowledge of agents also affect the policyholders' perception of the overall service quality of life insurers. Research has revealed that service quality is crucial to customer satisfaction and loyalty in the life insurance industry. (Khurana, 2013; Nguyen *et al.*, 2018; Rai & Medha, 2013; Siddiqui & Sharma, 2010a).

Based on the review of existing literature (H. et al., 2023; Khurana, 2013; Paposa et al., 2019; Prakash GM, 2022; Saha & Dutta, 2019; Sandhu & Bala, 2011; Siddiqui & Sharma 2010a, 2010b; Singh et al., 2014), six dimensions of service quality in the life insurance sector are identified as presented in Table 2.1.

Table 2.1: Proposed Dimensions of Service Quality in the Life Insurance Sector

Dimension	Variables
Assurance	• Well-informed and trained agents • Trustable agents who clearly explain all terms and conditions • Understands the point of view of customers • Understands specific needs of the customers
Personalized Financial Planning	• Flexible payment schedule • Variety of product solutions • Supplementary services • A provision for convertibility of products
Competence	• Efficient and dependable staff to handle customers' problems • Prompt and efficient grievance-handling mechanism • Easy access to information • Prompt and hassle-free claim settlement system
Tangibles	• Adequate number of branches • Branches at accessible locations • Good infrastructure and ambience • Good certifications and credentials
Corporate Image	• A simple and less time-consuming procedure for purchasing a policy • Innovative new products • Is financially stable • Provides value for money
Technology	• Information through SMS, email, etc. • An interactive online platform (website, mobile app) • A prompt online complaint-handling system

Source: The Authors

3. Objectives of the Study

Several conceptual and empirical studies have been undertaken on service quality in different sectors. However, an adequate service quality measurement scale for life insurance still needs to be adequate. Hence, the objectives of this paper are:

- To develop a valid and reliable scale for the measurement of policyholders' perceived service quality in the life insurance sector and
- To measure policyholders' perceived service quality of life insurance companies.

4. Research Methodology

The following research methodology has been used to achieve the objectives of this paper.

4.1 Research Design and Sample Frame

The study employs a descriptive and quantitative research design, collecting data from life insurance policyholders in major cities of Uttar Pradesh from November 2022 to March 2023. Self-administered Google Form questionnaires were distributed via social media and email, targeting 400 respondents through non-probabilistic convenience and snowball sampling. With a 75% response rate, 276 out of 303 complete and usable responses were received.

4.2 Research Instrument

A modified SERVPERF questionnaire, developed after an in-depth review of existing literature and expert interviews, gathered data in two sections: the first covered respondent demographics. At the same time, the second focused on assessing service quality across 23 attributes with responses recorded on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

4.3 Statistical Tools and Techniques Used for Analysis

The data collected through the research instrument has been analysed using statistical software. Descriptive statistics, Cronbach alpha for reliability analysis and exploratory factor analysis using principal component analysis with varimax rotation, including KMO and Bartlett's test, have been performed on the data using the software.

5. Data Analysis and Results

5.1 Profile of the Respondents

The profile of the respondents is presented in Table 5.1.

Table 5.1: Profile of the Respondents

		Frequency	Percentage
Age	Under 30	140	50.72%
	31-45	99	35.87%
	46-60	31	11.23%
	Above 60	6	2.17%
	Total	**276**	**100.00%**
Gender	Female	115	41.67%
	Male	161	58.33%
	Total	**276**	**100.00%**
Marital Status	Married	134	48.55%
	Unmarried	140	50.72%
	Other	2	0.72%
	Total	**276**	**100.00%**
Educational Qualification	Secondary	1	0.36%
	Senior Secondary	6	2.17%
	Graduation	48	17.39%
	Post Graduation	104	37.68%
	Doctorate	100	36.23%
	Professional	17	6.16%
	Total	**276**	**100.00%**
Occupation	Student	115	41.67%
	Salaried Employee	119	43.12%
	Professional	16	5.80%
	Business	11	3.99%
	Retired	4	1.45%
	Unemployed	11	3.99%
	Total	**276**	**100.00%**
Income (Monthly)	Up to Rs. 15,000	79	28.62%
	Rs.15,001 – Rs.30,000	48	17.39%
	Rs.30,001 – Rs.45,000	46	16.67%
	Rs. 45,001 – 60,000	28	10.14%
	Above Rs.60, 000	75	27.17%
	Total	**276**	**100.00%**

Source: The Authors

5.2 Reliability Analysis

Reliability analysis measures the internal consistency of a scale, primarily assessed through Cronbach's Alpha coefficient, which ranges from 0 to 1 (Cronbach, 1984). All questionnaire items were analysed in our study, yielding a Cronbach's Alpha coefficient of 0.961 (Table 5.2). This surpasses its satisfactory value of 0.70, affirming high-scale reliability (Hair et al., 2014; Nunnally, 1978).

Table 5.2: Reliability Statistics of the Scale

Cronbach's Alpha	N of Items
.961	23

5.3 Exploratory Factor Analysis

Prior to factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity is performed to assess the sampling adequacy and appropriateness of data for factor analysis. The value of the KMO statistic is 0.957, which is very high (Table 5.3) and considered excellent. Also, Bartlett's test of Sphericity is highly significant ($p < 0.000$). This indicates that the sample is adequate and appropriate for factor analysis.

Table 5.3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.957
Bartlett's Test of Sphericity	Approx. Chi-Square	4870.865
	df	253
	Sig.	.000

In order to extract the underlying service quality dimensions, Principal Component Analysis with Varimax Rotation was conducted for Factor Analysis, revealing that the first four components, out of 23, had Eigenvalues over 1.00, explaining 70.616% of the variance Table (5.4). This suggests reducing the original 23 components to four factors, losing only 29.4% of the information.

Table 5.4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.523	54.446	54.446	12.523	54.446	54.446	5.236	22.763	22.763
2	1.528	6.645	61.091	1.528	6.645	61.091	3.933	17.099	39.862
3	1.139	4.951	66.042	1.139	4.951	66.042	3.582	15.573	55.435
4	1.052	4.574	70.616	1.052	4.574	70.616	3.492	15.181	70.616
Extraction Method: Principal Component Analysis.									

Factor loading values ranging from 0.30 to 0.40 are deemed acceptable, but for practical significance, values should be above 0.50 (Hair et al., 2014). Considering this, variables having a loading value greater than 0.50 are considered in this study. As indicated in the Rotated Component Matrix (Table 5.5), 23 aspects of policyholders' perceived service quality for life insurance companies can be condensed into four factors representing service quality dimensions.

Table 5.5: Rotated Component Matrix[a]

	Component			
	1	2	3	4
Well-informed and trained agents	.306	.289	.716	.208
Trustable agents who clearly explain all terms and conditions	.170	.168	.785	.256
Understands the point of view of customers	.679	.137	.241	.356
Understands specific needs of the customers	.639	.220	.303	.385
Efficient and dependable staff to handle customers' problems	.281	.274	.663	.281
Prompt and efficient grievance-handling mechanism	.167	.239	.740	.281
Easy access to information	.253	.670	.371	.294
Prompt and hassle-free claim settlement system	.679	.209	.241	.277
Flexible payment schedule	.230	.746	.219	.233
Variety of product solutions	.266	.749	.324	.239
Supplementary services	.267	.635	.290	.299
A provision for convertibility of products	.277	.158	.271	.759
Information through SMS, email, etc.	.335	.707	.189	.268
An interactive online platform (website, mobile app)	.332	.420	.198	.548
A prompt online complaint handling system	.266	.337	.224	.726
A simple and less time-consuming procedure for purchasing a policy	.349	.382	.165	.632
Innovative new products	.320	.291	.283	.665
Is financially stable	.752	.259	.281	.156

Provides value for money	.648	.062	.260	.367
Adequate number of branches	.385	.416	.595	-.044
Branches at accessible locations	.735	.350	.212	.121
Good infrastructure and ambience	.733	.335	.062	.237
Good certifications and credentials	.780	.291	.166	.195
Extraction Method: Principal Component Analysis. **Rotation Method:** Varimax with Kaiser Normalization.				
a. Rotation converged in 6 iterations.				

5.4 Factor Analysis Results

Instead of loading in the proposed dimensions shown in Table 2.1, some variables are loaded in different factors/dimensions. Hence, the four factors extracted after factor analysis have been named accordingly and presented in Table 5.6.

Table 5.6: Extracted Dimensions of Service Quality in the Life Insurance Sector

Dimension	**Variables**
Assurance & Tangibles	• Understands the point of view of customers • Understands specific needs of the customers • Prompt and hassle-free claim settlement system • Is financially stable • Provides value for money • Branches at accessible locations • Good infrastructure and ambience • Good certifications and credentials
Convenience	• Easy access to information • Flexible payment schedule • Variety of product solutions • Supplementary services • Information through SMS, email, etc.
Technology & Innovation	• A provision for convertibility of products • An interactive online platform (website, mobile app) • A prompt online complaint-handling system • A simple and less time-consuming procedure for purchasing a policy • Innovative new products
Competence	• Well-informed and trained agents • Trustable agents who clearly explain all terms and conditions • Efficient and dependable staff to handle customers' problems • Prompt and efficient grievance-handling mechanism • Adequate number of branches

Source: The Authors

Here, a comprehensive four-dimensional scale for measuring policyholders' perceived service quality in the life insurance sector is revealed, encompassing Assurance and tangibles, Convenience, Technology,

Innovation and Competence. Reliability tests on each dimension revealed a minimum Cronbach's Alpha of 0.882, surpassing the acceptable threshold of 0.70, ensuring the scale's reliability (Table 5.7).

Table 5.7: Reliability Statistics of Individual Dimensions

Dimension	Cronbach's Alpha	N of Items
Assurance & Tangibles	.930	8
Convenience	.908	5
Technology & Innovation	.898	5
Competence	.882	5

5.5 Measurement of Service Quality of Life Insurance Sector

Based on the scale developed in this study, the service quality of the life insurance sector was measured. Since it is a performance-only SERVPERF-type scale, the performance scores for each variable and dimension were calculated, as shown in Table 5.8.

Table 5.8: Performance Scores

	Variables Score- Mean	Std. Deviation	Dimensions Score
Assurance & Tangibles			**3.699**
Understands the point of view of customers	3.580	0.967	
Understands specific needs of the customers	3.663	0.930	
Is financially stable	3.884	0.999	
Provides value for money	3.659	0.980	
Branches at accessible locations	3.750	1.034	
Good infrastructure and ambience	3.696	0.935	
Good certifications and credentials	3.764	0.998	
Prompt and hassle-free claim settlement system	3.594	1.017	
Convenience			**3.690**
Easy access to information	3.681	1.002	
Flexible payment schedule	3.645	1.025	
Variety of product solutions	3.761	0.907	
Supplementary services	3.496	0.917	
Information through SMS, email, etc.	3.866	1.062	
Technology & Innovation			**3.555**
A provision for convertibility of products	3.417	1.032	
An interactive online platform (website, mobile app)	3.681	1.068	
A prompt online complaint handling system	3.446	1.062	
A simple and less time-consuming procedure for purchasing a policy	3.678	1.013	

Innovative new products	3.554	0.991	
Competence			**3.675**
Well-informed and trained agents	3.728	1.003	
Trustable agents who clearly explain all terms and conditions	3.641	1.081	
Efficient and dependable staff to handle customers' problems	3.699	0.954	
Prompt and efficient grievance-handling mechanism	3.543	1.031	
Adequate number of branches	3.764	1.124	
Overall Performance Score			**3.661**

6. Findings

Table 5.8 reveals a concerning overall service quality performance score of 3.661 in the life insurance sector since the responses were collected on a 5-point scale. This score indicates a notable deficiency in service quality, signalling a low level of satisfaction. Improvements across individual dimensions are imperative for life insurance companies to enhance their overall score, given that their scores range from 3.555 to 3.699, highlighting the need for enhancement in all service quality dimensions.

The 'Assurance & Tangibles' dimension has the highest performance score (3.699), indicating that policyholders are somewhat satisfied with life insurance companies' physical facilities and trust their insurers. Improvement opportunities exist, particularly in variables with low scores, such as 'Understands the point of view of customers' (3.580) and 'Prompt and hassle-free claim settlement system' (3.594).

The 'Convenience' dimension has a performance score of 3.690, slightly lower than Assurance & Tangibles. It indicates policyholders are somewhat satisfied with the services for ease and comfort, but there is room for improvement, especially in 'Supplementary services', which has the lowest score (3.496).

The 'Competence' dimension has a performance score of 3.675, showing that policyholders are somewhat satisfied with life insurance companies' competence in serving customers effectively and efficiently. However, improvement is needed in the grievance-handling mechanism, with the variable 'Prompt and efficient grievance-handling mechanism' scoring the lowest at 3.543.

The 'Technology & Innovation' dimension has the lowest performance score (3.555), indicating that policyholders are not very satisfied with the technological aspects and innovation of the life insurance companies. Improvement is crucial, particularly in variables like 'A provision for convertibility of products' (3.417), 'A prompt online complaint handling system' (3.446) and 'Innovative new products' (3.554). Prioritizing online complaint handling and innovation is recommended.

7. Managerial Implications

The factor analysis revealed a four-dimensional scale for measuring perceived service quality in the life insurance sector, including dimensions 'Assurance & Tangibles', 'Convenience', 'Competence' and 'Technology & Innovation.' The managerial implications of this study are as follows:

- The newly developed four-dimensional scale can assist life insurance companies' management in measuring policyholders' perceived service quality.
- The study revealed specific areas within each dimension that require special attention from the management for service quality enhancement.
- The study's findings offer insights for crafting policies and strategies to enhance overall service quality in life insurance companies.

8. Scope for Further Research

This study proposes avenues for future research in service quality within the life insurance sector. Similar studies could be replicated in various states across India to enhance comprehension of perceived service quality. Additionally, conducting longitudinal research would enable exploring how customers' perceptions evolve over time and in response to specific service encounters. A prospective study using confirmatory factor analysis could validate the findings of this research. Furthermore, delving into the impact of demographics on policyholders' perceptions of service quality towards life insurance companies could offer valuable insights for future studies.

9. Conclusion

This study has yielded a reliable four-dimensional scale for assessing policyholders' perceived service quality in the life insurance sector. Despite an initial six-dimensional proposal, factor analysis revealed Assurance and tangibles, Convenience, Competence, Technology, and innovation as the critical dimensions. The scale offers a valuable tool for life insurers to measure and enhance their service quality, pinpointing areas for improvement. Performance scores underscore the need for enhancements across the board, emphasizing customer perspective, efficient grievance handling, seamless claim settlements, and innovative product offerings. The study's insights empower life insurers to devise strategies for competitive advantage through improved service quality.

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Article

MSMEs of Haryana: Challenges and Revival Strategies

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Santpal**

Abstract

MSMEs are the industry's transformation engine and the backbone of economic growth for India, just as they are for any other developed or developing nation. They contribute to regional development, employment generation, industrial production, GDP growth, economic diversification, social stability, export earnings, and originating self-reliance. This dynamic sector also faces several challenges. The literature review from various studies explores the various problems and challenges encountered by MSMEs finance, production, marketing, human resources, technology, operations, export potential, lack of management, financial literacy, problems in acquiring capital on time, lack of consultancy support, complicated documentation, lack of updated technological skills, low literacy in ICT, lack of motivation, presence of high employee attrition, poor-quality products, inefficient logistics, poor bargaining power, infrastructural and informational gaps, complicated labour and other laws, policy uncertainty, etc. This research paper aims to present the financial and production challenges faced by MSMEs in Haryana and find out the probable efforts that have also been made to suggest remedial options.

***Keywords**: MSMEs, Challenges, Industry, Problems and Economy*

ABSTRACT

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1. Introduction

India is one of the fastest-developing economies in the world, presently the fifth largest economy (IMF, 2023), and small-scale enterprises are playing a vital role in generating employment and contributing to the nation's economy. (Essel et al., 2019; Kadam, 2019). These enterprises are an inspiring subject and a strong pillar of the national economy (Shah, R. 2020) that constantly expands to another business-standard. The next decade will see India transform from an emerging power into an economic powerhouse. In this journey, MSMEs will be an essential gear or pillar (Shah, R. 2020); that is, they will contribute to the backbone of the Indian economy by generating employment opportunities during the economic slowdown and recession periods with remarkable growth rates (Panigrahi, S.K., 2020) at a large scale and facilitating the industrialization of backward and rural areas as compared to large industries (Ministry of Finance, 2018). This sector is also considered a 'growth engine' for the economy in many developed or developing countries, with a constant growth rate in India and abroad. (Panigrahi, S.K., 2020). As per the economic survey of India, this sector (MSMEs) is at a better stage for providing employment opportunities at a large scale and facilitating the industrialization of backward and rural areas compared to large industries (Ministry of Finance, 2018).

Haryana and MSMEs

In the context of Haryana, the government gives financial help and incentives to the business sector to provide a progressive, developing, and competitive environment for business (Industrial and Investment Policy 2011). Haryana Government also ranked first in Ease of Doing Business in North India and fifth in the country (https://economictimes.com). It is the largest producer and exporter of food grains, software, basmati rice, two- and four-wheelers i.e., tractors, and cars (Business Reforms Action Plan 2017). At present, Haryana state is in a self-dependent phase and is in the position of becoming a production centre. Various MNCs are now getting ready to invest in various state-owned enterprises. In Haryana, a separate, distinct department has been promoting MSMEs. The Government of India and RBI specify several rules and regulations and prepare policies to improve banks' contribution to development.

Due to the marvellous efforts of the state government, MSMEs can generate employment and reduce regional imbalance. In Haryana, there are more than 1 lakh enterprises with an investment of Rs. 20,000 crore and 10 lakh employment options. They are producing scientific instruments, metal, textile, light, and food processing-related items. Major units of MSMEs are situated in Panipat, Ambala, Faridabad, Rohtak, Gurugram, Kaithal, and Panchkula. The state government announced plans to develop MSMEs, which include advanced technology, market access, financial incentives, and infrastructure developments. The main aims of growth in this sector are generating more employment opportunities, regional development, and infrastructure developments (Enterprise Promotion Policy in 2015).

The agriculture sector has been the primary occupation of the Haryana people since its inception. Farmers are mobilizing to the small industrial sector because of decreased land-holding capacity. Therefore, the state government is setting up agro-based industries to fully exploit their people's capacity by opening skill development and training centres for MSMEs. Despite the vital role and challenges faced by this sector, timely and appropriate impetus to this sector can outcome in growth rate. This paper highlights possible inputs that can help MSMEs provide a supportive environment. Further, it is required to adopt a new launch schemes campaign to foster the nation's growth through these units, i.e., Make in India, Digital India, new research and development, global technologies and innovation, and developing corporate vendors.

Review of Literature

Venugopal, K., and Das, S. (2022) reveal the challenges MSMEs face, i.e., financing, technology, export, market, etc. Further research discussed that government support for these MSMEs positively impacted the growth of these enterprises. Sharma (2022) also explained various challenges like decreased income, decreased customer count, and increased operational and production costs. Bisht, H.S., and Singh, D. (2021) stated categories of challenges: infrastructure/technology, human

resources, finance, and government-related. The researcher further added that upgradation of knowledge and skill, improvement in productivity and quality of product, labour laws, uses of IT techniques in business processes, provision to accept alternative arrangements for collateral, and simplification of the loan distribution process are the key recommendations for suitable growth of the sector. Das. R. (2021) finds in his study that lack of adequate infrastructure, communication and transport problems, less importance given by banks and financial institutions, lack of awareness and innovative ideas, shortage of skilled workforce, lack of adequate marketing skills, raw material problems, access to new markets, lower quality of products, government rules and policies, and marketing problems are the key issues that hamper the growth of MSMEs. Mai Al Saifi (2021) defined the study's outcome as showing that key challenges that affect MSMEs are high credit facility costs, complex collateral requirements, a lack of an adequate guarantor, a short repayment time, and high credit facility fees. Lowering interest rates enhances customer service by widening the portfolio of products, extending the loan payment cycle, and rethinking the collateral policy on security. This study also provides recommendations to help overcome these challenges (Nadyan et al., 2021). Mittal and Ramman (2021) find that a lack of managerial skills by small business owners would affect the growth possibilities of the businesses. Government administrative requirements added to the challenges encountered by MSMEs. Tripathy and Bisoni (2021) highlighted the contribution of MSMEs to the growth of the country's economy, the losses incurred by this sector, and probable solutions. Raney (2020) has analysed the impact of various challenges on MSMEs, i.e., shortage of raw materials and other materials, skilled workforce, absence of advancement in technology, and FDI. This paper's research suggested that the core areas that impact MSMEs are finance, people, logistics, and premises manufacturing. Sivasree, H.V., and P. Vasavi (2020) find a shortage of skill development and training programs, poor infrastructure, competition from MNCs, a lack of marketing channels, the absence of the latest technology, the unavailability of raw materials, and a shortage of credit from banks to be the key challenges of this sector. S. Jailap Deen (2020) mentioned the shortage of training centres for entrepreneurs, the shortage of technical support, difficulties in obtaining finance, the lack of technical and infrastructure support, the lack of proper marketing of the product, competition from local, national, and international entities, the absence of the latest technology, the absence of accessing credit facilities from banks, inadequate information, and the absence of skilled labour.

Research Methodology

Primary data was collected using the survey method from a sample of 384 MSMEs to discover the problems encountered using **the Krejcie and Morgan (1970**) table. This study was undertaken by taking a stratified random sampling of six divisions of Haryana. The sample from six districts of the state from each division, i.e., Yamuna Nagar (39), Faridabad (93), Gurugram (103), Hisar (49), Sonipat (40) and Panipat (60), has been selected, which has the maximum number of enterprises.

Independent Variable- gender, education qualification, age of business units, age of entrepreneurs and category of enterprises.

Dependent Variable- Financial and Production Challenges

Measurement of Financial Challenges- Seven statements were used to analyse the financial challenges encountered by the MSME sector. All seven assertions have been rolled into two categories: capital and loan. The statement that enormous capital is required, insufficient working capital and lack of financial literacy have been combined in factor capital. Statement of delay in obtaining a loan, interest on the loan is high, collateral and the amount of loan is insufficient to meet the requirement has been combined as loan factor, and the combination of factor loan and capital termed as financial challenges were then utilised to evaluate. These statements were extracted from Goswami, P. (2018) and Kumar, K. & K Divyang, K. (2017).

Measurement of Production Challenges- Seven statements were used to analyse MSMEs' production challenges. These seven statements have been combined into two factors, i.e., raw material, infrastructure, and equipment. The statement of non-available of raw material, high cost of raw material

and poor quality of raw material are combined in factor raw material challenges. The statement on equipment problems, power shortage, obstruction by intermediaries and lack of technology combined in infrastructure and equipment factors. Raw materials, infrastructure, and equipment have been combined as production challenges. These statements have been taken from Goswami, P. (2018) and Kumar. K. & K Divyang, K. (2017).

Entrepreneurs were asked to indicate their level of agreed or disagree with statements using a 5-point Likert scale, with 1 indicating "strongly disagree" and 5 indicating "strongly agree". The collected data were processed through SPSS 29. One-way ANOVA (three intended variables) and t-test (two independent variables) have been used as a statistical tool to analyse this study.

Analysis and Interpretation

Financial Challenges

Hypothesis 1

Ho: Mean Financial Challenges and the two components of financial challenges entrepreneurs face do not differ significantly based on respondents' gender.

H1: Mean Financial Challenges and the two components of financial challenges entrepreneurs face differ significantly based on respondents' gender.

Table: 1 Financial Challenges and Gender of Respondents.

Component	Gender	N	Mean	Test Statistics	P value
Capital	Male	376	3.5496	9.144	.003
	Female	08	4.1667		
Loan	Male	376	3.5831	8.514	.004
	Female	08	4.0000		
Financial Challenges	**Male**	**376**	**3.5664**	**7.806**	**.005**
	Female	**08**	**4.0833**		

Source: Data compiled by researcher using SSPS (version 29)

Table 1 shows the financial problems faced by entrepreneurs broken down by gender. The data show that the average score for capital-related financial problems is higher for women (4.1667) than for men (3.5496) entrepreneurs. In the same way, the average score for financial challenges tied to loans is higher for female entrepreneurs (4.000) than for male entrepreneurs (3.5831). The parametric test (t-test) determines whether a financial problem and its parts are linked, considering the respondents' gender. Before using the test, Leven's test is used to check the assumption that the difference between two gender groups is the same. According to the data, variance is now the same everywhere. The null hypothesis looks at whether capital and loan-related financial problems are different for men and women in a big way. The t-statistic for capital challenges is 9.144, and the t-statistic for loan challenges is 8.514. means that cash and loan-related financial problems differ for men and women. P value is significant at a 5% level of significance.

Overall, the mean score of female entrepreneurs (4.0833) is higher than that of male entrepreneurs (3.5644), t-value is 7.806 (less than 5%). Financial challenges and their two parts, capital, and loans, differ for men and women. So, the null hypothesis is not valid.

Hypothesis 2

Ho: Mean Financial Challenges and the two components of financial challenges faced by entrepreneurs do not differ significantly based on the age of entrepreneurs.

H1: Mean Financial Challenges and the two components of financial challenges faced by entrepreneurs differ significantly based on the age of entrepreneurs.

Table:2: Financial Problems and the Age of Entrepreneurs

Component	Age of Entrepreneurs	N	Mean Score	Test Statistics (F value)	P value
Capital	Up to 30	63	2.2090	3.679	.026
	30-40	182	2.6103		
	Above 40	139	2.3975		
Loan	Up to 30	63	2.0714	4.892	.008
	30-40	182	2.4904		
	Above 40	139	2.2338		

Financial Challenges	Up to 30	63	**2.1402**	4.547	.011
	30-40	182	**2.5504**		
	Above 40	139	**2.3981**		

Source: Data compiled by researcher using SSPS (version 29)

The average score for financial difficulties and its two parts, capital and loan, are displayed in Table 2. The age group of 30-40 had the highest mean score of capital-related issues (2.6103), followed by those between the ages of 40 and above (2.3675) and those below the age of 30 (2.2090). The null hypothesis has been evaluated to see if the difference is statistically significant. One-way ANOVA tests the hypotheses when there are more than two independent variable categories. The findings of the Levene test indicate that the variances are similar. The F-value for problems involving capital is 3.676, and since the P-value is less than 0.05, it is statistically significant at the 5% level. Therefore, the null hypothesis must be rejected.

The average score of Loan-related financial problems is higher at 2.4904 among those aged 30–40, 2.2338 among those aged 40, and 2.0714 among those aged 30 and under. The t-values are statistically significant at the 5% level because the F-value is 4.892 and the P-value is 0.05. Therefore, the alternative hypothesis must be accepted.

The mean score of financial difficulties is highest for those between the ages of 30 and 40 (2.5504), followed by those between the ages of 40 and above (2.3981) and those aged up to 30 (2.1404). The F-values are statistically significant at the 5% level since the P-value is less than 0.05. Therefore, the alternative hypothesis must be accepted.

Hypothesis 3

Ho: Mean Financial Challenges and its two components of financial challenges faced by entrepreneurs are similar based on the qualifications of entrepreneurs.

H1: Mean Financial Challenges and the two components of financial challenges entrepreneurs face differ significantly based on their qualifications.

Table: 3 Financial Challenges and Qualification of Entrepreneurs

Component	Qualification of Entrepreneurs	N	Mean Score	Test Statistics (F value)	P value
Capital	Up to 12th	51	3.6275	4.591	.011
	Graduation	187	3.6542		
	Post-Graduation	146	3.3493		
Loan	Up to 12th	51	2.3873	9.681	.000
	Graduation	187	2.5334		
	Post-Graduation	146	2.0462		
Financial Challenges	Up to 12th	51	**3.0074**	**14.942**	**.000**
	Graduation	187	**3.0938**		
	Post-Graduation	146	**2.6978**		

Researchers used SSPS (version 29) to compile their data.

The average score for the financial difficulties survey and its two subscales are shown in Table 3. Graduate-level entrepreneurs had the most significant average qualification (3.6542), followed by those with a postgraduate degree (3.6275) and those with an undergraduate degree (3.3493). The significance of the difference in the basic educational level of entrepreneurs has been tested using the null hypothesis. An ANOVA is utilized to test the hypotheses. The findings of the Levene test indicate that the variances are similar. The F statistic for capital-related problems is 4.591, and the P-value is less than 0.05. Therefore, the alternative hypothesis has been accepted.

The graduate entrepreneurs had the highest mean score (2.5334), followed by up to 12th qualification (2.3873) and postgraduates (2.0462) respondents. The significance level for the F-statistic is 5%, and the P-value is less than 0.05; the results are significant. Therefore, the alternative hypothesis has been accepted.

The mean score of financial difficulties of graduate entrepreneurs has been higher (3.0938), followed by up to 12th (3.0074) and postgraduates (2.6978). The F-statistic is 14.942, and as the P-value is less than

0.05, the F-values are statistically significant at the 5% level. Therefore, the null hypothesis has been retained.

Hypothesis 4

Ho: Mean Financial Challenges and its two components of financial challenges faced by entrepreneurs are similar based on the age of respondents.

H1: Mean Financial Challenges, and the two components of financial challenges faced by entrepreneurs differ significantly based on the basic of respondents.

Table 4: Financial challenges and Age of enterprises.

Component	Age of Enterprises	N	Mean Score	Test Statistics (F value)	P value
Capital	Less Than 5	138	3.4662	2.327	.099
	5-10	100	3.7100		
	More than 10	146	3.4795		
Loan	Less Than 5	138	2.4438	2.833	.060
	5-10	100	2.4000		
	More than 10	146	2.1712		
Financial Challenges	**Less Than 5**	138	**2.9550**	2.471	.032
	5-10	100	**3.0550**		
	More than 10	146	**2.8253**		

Source: Data compiled by researcher using SSPS (version 29)

The average mean score for financial challenges and its two parts, capital and loan, are shown in Table 14.4. The average mean score for capital-related financial difficulties is highest for those in operation between 5-10 years (3.7100), followed by more than ten years in operation (3.4795) and less than five years in operation (3.4662). The hypothesis has been researched to check whether the difference is meaningful. A one-way ANOVA is employed to test the hypotheses since only three categories of independent variables exist. Levene's test indicates no evidence of variance homogeneity. With an F statistic of 2.327, capital-related financial difficulties are statistically significant at the 10% significance level. Therefore, the alternative hypothesis must be accepted.

Enterprises with ages less than five years (2.4438) had the highest mean score of loan-related financial issues (3.6675), followed by those with ages between 5- 10 years old (2.4000). The F statistic for the loan-related challenges is 2.833, and the P value is smaller than 10% (significant at the 10% level). As a result, the null hypothesis has been rejected.

The average score of financial difficulties is highest for enterprises ages 5-10 (3.0550), followed by those between less than five years (2.9550) and more than ten years (2.8253). The F statistic for the financial challenges is 2.471, and the P value is smaller than 0.05; the F values are significant at the 5% level. Therefore, the alternative hypothesis has been accepted.

Hypothesis 5:

Ho: Financial challenges and their two components are similar to the basic enterprises category.

H1: Financial challenges and their two components differ significantly in the basic enterprises category.

Table 5: Financial Challenges and Category of Enterprises.

Component	Category of Enterprises.	N	Mean Score	Test Statistics (F value)	P value
Capital	Micro	239	3.7197	12.884	.001
	Small	104	3.2051		
	Medium	41	3.2927		
Loan	Micro	239	2.3692	2.100	.124
	Small	104	2.3582		
	Medium	41	2.0183		
Financial Challenges	Micro	239	**3.0445**	9.374	.001
	Small	104	**2.7817**		
	Medium	41	**2.6555**		

Source: Data compiled by researcher using SSPS (version 29)

The average score for financial difficulties and its two components by business category are shown in Table

5. Microbusinesses have the highest mean score of capital problems (3.7197), followed by medium businesses (3.2927) and small businesses (3.2051). F statics for financial problems in the is 12.884. The significance level of 5% requires a p-value of less than 0.05. Therefore, the alternative hypothesis has been accepted.

Micro enterprises have the highest mean score of loan problems (2.3692), followed by small (2.3585) and medium (2.0183) enterprises. The F-statistic is 2.100, and the P-value is more than 0.05; the F-values are not statistically significant at a 5% level. As a result, we will continue to use the null hypothesis.

Micro-enterprises face more financial difficulties (3.0445), followed by small businesses (2.7817) and medium-enterprises (2.6555). The F-statistic is 9.374, and the P-value is less than 0.05 (significant at a 5 % level of sign.). Therefore, the alternative hypothesis has been accepted.

Production Challenges

Hypothesis 6

H0: Mean Production challenges and the two components entrepreneurs face do not differ significantly with respondents' gender.

H1: Mean Production challenges and the two components of Production challenges entrepreneurs face differ significantly concerning respondents' gender.

Table 6- Production Challenges and Gender of Respondents.

Component	Gender	N	Mean	Test Statistics	P value
Raw Material	Male	376	3.4858	.421	.517
	Female	08	3.6250		
Infrastructure & Equipment	Male	376	3.4486	5.945	.015
	Female	08	4.0000		
Production Challenges	**Male**	376	**3.4672**	**3.499**	**.062**
	Female	08	**3.8125**		

Source: Data compiled by researcher using SSPS (version 29)

Table 6 displays the production challenges, with the gender of entrepreneurs. Female entrepreneurs had a higher mean score (3.6250) for raw material-related production problems than males (3.4858). A parametric test (t-test) is performed to analyse the production difficulties. The null hypothesis is to see if a statistically significant difference exists between production challenges and gender or respondents. The T-statistic is .421 (not significant at the 5% level of sig.), suggesting no significant gender differences in the difficulties associated with the raw materials.

Similarly, the average score of female entrepreneurs (4.000) is higher than that of male entrepreneurs (3.4486) regarding infrastructure and equipment-related production issues, with a t-statistic of 5.945 (significant at the 5% level of sig.). Therefore, the alternative hypothesis has been accepted. Overall, female entrepreneurs have a higher mean score (3.8125) for production challenges than males (3.4672). T- statistics is 3.499 (significance at 10% significance level). Since production difficulties, Therefore, the alternative hypothesis has been accepted.

Hypothesis 7

H0: Production challenges and their two components are the same, as are production-related challenges when comparing entrepreneurs of different ages.

H1: There is a large age difference between Production Challenges and its two components, Production Challenges.

Table 7: Production Challenges and Age of Entrepreneurs

Component	Age of Entrepreneurs	N	Mean Score	Test Statistics (F value)	P value
Raw Material	Up to 30	63	4.1376	9.276	.001
	30-40	182	3.9744		
	Above 40	139	3.6763		
Infrastructure & Equipment	Up to 30	63	2.7183	.442	.643
	30-40	182	2.5920		
	Above 40	139	2.5845		
Production Challenges	Up to 30	63	**3.4279**	4.972	.007
	30-40	182	**3.2832**		
	Above 40	139	**3.1304**		

Source: Data compiled by researcher using SSPS (version 29)

The production challenges related to the mean score and the two factors that make up that score are displayed in Table 7. Entrepreneurs up to 30 years of age have the highest mean score (4.1376) for raw material-related production issues, followed by those 30–40 years old (3.9744) and those older than 40 years old (3.6763). An ANOVA is utilized to test the hypotheses. Levene's test shows that the variances are similar across groups. F statistics for raw materials-related challenges is 9.276. The F-values are statistically significant at the 5% level since the P-value is less than 0.05. Therefore, the alternative hypothesis has been accepted.

Challenges with infrastructure and equipment have the highest mean score among those under the age of 30 (2.7183), followed by those between the ages of 30- 40 (2.5920) and over the age of 40 (2.5845). The. 442 F statistic and the larger-than-.05 P value indicates that the F values are not statistically significant at the 5% level. Therefore, the bull hypothesis has been retained.

The average score of production difficulties as a function of an entrepreneur's age is 3.4279 for those under 30, 3.2832 for those between 30- 40, and 2.5845 for those over 40. The 5% significance level requires a p-value of less than 0.05, and the F-statistic in this case is 4.972. Therefore, the alternative hypothesis must be accepted.

Hypothesis 8

Ho: Production challenges and their two components of production-related challenges are similar to the basic qualifications of entrepreneurs.

H1: Production Challenges and its two components of Production Related Challenges differ significantly on entrepreneurs' basic qualifications.

Table 8 Production challenges and qualification of Entrepreneurs

Component	Qualification of Entrepreneurs	N	Mean Score	Test Statistics (F value)	P value
Material	Up to 12th	51	3.7843	6.224	.002
	Graduation	187	3.6542		
	Post-Graduation	146	3.3493		
Infrastructure & equipment	Up to 12th	51	2.8775	14.895	.001
	Graduation	187	2.5334		
	Post-Graduation	146	2.0462		
Production Challenges	Up to 12th	51	**3.3309**	**21.994**	**.001**
	Graduation	187	**3.0938**		
	Post-Graduation	146	**2.6978**		

Source: Data compiled by researcher using SSPS (version 29)

Table 8 shows the mean score for production difficulties and its two components with respondents' qualifications. It is highest among those with up to 12th (3.7843), then those with graduates (3.6542), and post-graduates (3.3493) entrepreneurs. An ANOVA is utilized to test the hypotheses. The findings of the Levene test indicate that the variances are similar. The raw materials statistics have an F-statistics of 6.244. The significance level of 5% requires a p-value of less than 0.05. Therefore, the alternative hypothesis has been accepted.

The average score for difficulties with infrastructure and equipment is highest for those with a high school diploma or less (3.8775), followed by those with a bachelor's degree (2.5334) and a master's degree or more (2.0462). F values meet the 5% significance level, as the F statistic is 14.895 and the P value is smaller than 0.05. Therefore, the alternative hypothesis has been accepted.

The average score for production difficulties for a respondent qualification up to 12th is 3.3309 for graduates (3.0938) and post-graduates, 2.6978. The F-statistic is 21.994, and the P value is less than 0.05 (significance at 5% level of the sign.). Therefore, the alternative hypothesis has been accepted.

Hypothesis 9:

Ho: Production Challenges and the two components of Production Related Challenges do not differ significantly based on the age of the enterprises.

H1: Production Challenges and the two components of Production Related Challenges differ significantly based on the age of the enterprises.

Table 9- Production Challenges and Age of enterprises.

Component	Age of Enterprises	N	Mean Score	Test Statistics (F value)	P value
Raw Material	Less Than 5	138	2.9783	3.062	.048
	5-10	100	3.2567		
	More than 10	146	3.0776		
Infrastructure & equipment	Less Than 5	138	3.1268	1.832	.161
	5-10	100	3.3350		
	More than 10	146	3.1524		
Production Challenges	**Less Than 5**	138	**3.0525**	2.714	.068
	5-10	100	**3.2958**		
	More than 10	146	**3.1150**		

Source: Data compiled by researcher using SSPS (version 29)

The average score for production difficulties and its two components have been shown in Table 9. The mean score of raw material production challenges is highest for the ages of enterprises 5-10 (3.2567), followed by more than 10 (3.0776) years and less than 5 (2.9783) years. The significance of the difference has been tested by investigating the hypothesis. One-way ANOVA is employed to test the hypotheses. Levene's test shows that the variances are similar across groups. The raw materials problem has an F statistic of 3.062 and a P value of less than 0.05; the F values are significant at the 5% level. Therefore, we have accepted the null hypothesis.

Enterprises with 5-10 years had the highest mean score (3.3350) for infrastructure and equipment-related production challenges, followed by those with more than 10 years (3.1524) and less than 5 years (3.1268). The 5% significance level is not met by the F values (F statistic = 1.832, P > 0.05). Hence, we have retained the null hypothesis.

The average production difficulty score is highest for entrepreneurs between the ages of 5 and 10 (3.2958), followed by more than 10 (3.1150) years and less than 5 years (3.0525). The production problem has a significant F statistic of 2.471, and its P value is less than 10%, which is a significant value. Therefore, we have accepted the alternative hypothesis.

Hypothesis 10

Ho: Production Challenges and the two components of Production Related Challenges are similar in the basic category of Enterprises.

H1: Production Challenges and the two components of Production Related Challenges differ significantly on the basic category of Enterprises.

Table 10: Production Challenges and Category of Enterprises.

Component	Category of Enterprises.	N	Mean Score	Test Statistics (F value)	P value
Raw Material	Micro	239	3.1757	4.393	.013
	Small	104	2.8782		
	Medium	41	3.1138		
Infrastructure & Equipment	Micro	239	3.3651	14.418	.000
	Small	104	2.8317		
	Medium	41	3.0854		
Production Challenges	Micro	239	**3.2704**	9.905	.000
	Small	104	**2.8550**		
	Medium	41	**3.0996**		

Source: Data compiled by researcher using SSPS (version 29)

The average score for production difficulties and its two components by type of enterprise are shown in Table 10. Micro-enterprises' average is 3.1757, followed by medium at 3.1138, and small enterprises at 2.8782. The significance of the difference has been tested by examining the null hypothesis. A one-way ANOVA tests the hypotheses since only three values exist for the independent variable. Levene's test shows that the variances are similar across groups.

Raw materials challenges F statistics is 4.393, and the P value is less than 5%. (Significance at 5% level of sign.). There, the Ho has been rejected.

Micro enterprises have the highest mean score (3.3691) for infrastructure and equipment problems, followed by medium (3.0854) and small (2.8317) enterprises. The F-statistic is 14.418, and the P-value is less than 0.05, so the F-values are statistically significant at the 5% level. Therefore, the Ho has been accepted.

Micro-enterprises (3.2704) had the highest mean score of production problems, followed by medium (3.0996) and small (2.8550) enterprises. The F statistic is 9.905, and the P value is less than 0.05 (significant at the 5% level). Therefore, the Ho has been accepted.

Finding and Conclusion

Financial Challenges

Female entrepreneurs faced more financial challenges than male entrepreneurs in obtaining loans and capital. Entrepreneurs between the ages of 30- 40 experience the most financial challenges, followed by more than 40 and up to 30. Graduate entrepreneurs have had the most financial challenges depending on their qualifications, followed by up to 12th and post-graduate entrepreneurs. Entrepreneurs who had been in operation for 5–10 years had the most difficulty related to capital and overall financial challenges, followed by more than 10 years and less than 5 years. Entrepreneurs who have been in operation for less than 5 years have more loan challenges, followed by 5- 10 years. And more than 10 years. Microenterprises had the most challenges in their financial obligations connected to the capital, followed by small and medium enterprises. In contrast, micro-enterprises suffered the most significant challenges in terms of loans and overall financial challenges, followed by small and medium enterprises.

Production Challenges

The results showed that production challenges with its two components, i.e., raw material and infrastructure and equipment manufacturing challenges, were faced more by female than male entrepreneurs. These challenges are faced more by entrepreneurs under 30 than those between the ages of 30- 40 and over 40. Based on respondents' qualifications, it has been revealed that the production difficulties faced by those who qualify 12th, followed by graduation and post-graduate, are more based on respondents' qualifications. When comparing the ages of entrepreneurs, the results showed that those with 5–10 years of experience had the most production difficulty, followed by those with more than 10 years and those with less than 5 years. Micro, medium and small medium enterprises experienced the greatest production difficulties and their two components, raw material and infrastructure and equipment-related difficulties.

Suggestion:

1. The government should make it easier for SMEs to acquire banking services. These actions should include adjustments to interest rates, collateral standards, and credit registration processes. Therefore, the government should work on creating, expanding, and promoting these enterprises.

2. Take legal action against those who fail to make timely payments to MSMEs or who are in default themselves. Payment delays hamper the MSME's capacity and need to be improved orders.

3. The banks are helping by giving subsidies and financing government programmes. Banking institutions and the state must work together effectively. It is the responsibility of the bank manager to seek out struggling business owners and help them secure loans, with the branch manager responsible for adhering to the bank's established lending rates. The bank and DIC work together to coordinate loan disbursement and repayment.

4. There should be no unnecessary delays in the delivery of loans. The bank's ability to recoup loans promptly depends on its continued communication with business owners, with whom it must keep in regular contact to ensure prompt loan disbursement.

5. Loans taken out by the MSME sector should have reduced interest rates, with micro-enterprises paying the lowest rates, small enterprises paying somewhat higher rates, and medium enterprises paying the highest rates. These rates can be used for the first three to five years. The standard prices can be applied

after that. Policymakers should provide instruction on cash flow management for SMEs. Banks and other financial organisations can better allocate subsidies and other financial aid if people keep and disclose accurate financial information.

6. To reduce production losses caused by a raw material shortage, MSMEs must implement modern inventory management systems. The association of MSME units can solve the raw material problem and lead to the collective acquisition and delivery of scarce raw materials.

7. A local market should be formed for raw materials, which is particularly desirable because most of the raw materials used by MSME units come from outside the city.

8. The government needs to ensure that industrial estates have access to essential services like reliable power and water, proper drainage and roads, safe storage and disposal of chemical waste, efficient operation of effluent treatment plants, adequate housing for workers and technical personnel, convenient access to transportation, etc. These industrial estates should be constructed to the highest global standards to maximise efficiency and effectiveness.

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Article

Evolving a New Skill Development Framework for Employees: An Empirical Study in a PSU Setup

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Abstract

ABSTRACT

Indian Public Sector Undertakings (PSUs) are crucial, requiring a strategic focus on enhancing workforce competencies to meet the demands of an ever-evolving technological landscape. The human resource department plays a crucial role in shaping the skill development of employees, addressing the exponential advancements in technology. An attempt was made to devise an innovative approach within the Indian PSU context to bridge the skill gap between the existing employee skill levels and the escalating demands of global standards. By integrating a transformative training process, this initiative focuses on fostering a highly-skilled, error-free workforce as a driving force for increased productivity, quality and improved customer satisfaction. This paper sheds light on this unique skill development framework and its salient features to meet future business challenges.

Keywords: *Human Resource, Skill set, Skill gap, Competency, Productivity and Quality.*

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1. Introduction

In a rapidly changing world, skill development is an indispensable asset for organisations. Industries now prioritise skill development to unlock the potential of their workforce. A skilled workforce completes tasks efficiently and elevates quality, leading to heightened profitability and increased customer satisfaction. In navigating the challenges of a globalised and technologically advanced landscape, organisations are strategically moving towards a dual approach of operational excellence and innovation (Anita et al., 2020). The significance of a skilled workforce in achieving performance excellence necessitates a steadfast commitment to continuous skill development, facilitated through a customised training plan and a robust performance management system. As India aims to position itself as a global manufacturing hub, public sector enterprises actively undertake organisational restructuring, prioritising evolving a robust skill development framework (Chandra et al., 2020).

2. Literature Framework:

The literature search used a combination of keywords to ensure a comprehensive and targeted approach. Relevant keywords related to skill development, PSU setups, and training methodologies were applied in searches across reputable databases. The author focused on articles that provided insights into employee skill development approaches. This search strategy aimed to capture a broad spectrum of literature while maintaining relevance to the research topic. The systematic approach allowed for a thorough examination of existing literature on workforce skill development, providing a solid foundation for the empirical study.

3. Objective of the Study

The public sector is essential to the Indian economy, and its performance is critical to its growth and development. However, the productivity of PSUs has been a matter of concern for policymakers and stakeholders. Developing a skill development framework can help improve performance by enhancing efficiency and effectiveness (Krishnamoorthy et al., 2019). The primary objective of this research proposal is to develop a skill development framework suited for PSUs. The framework has been designed to enhance the performance of employees by improving their skill level, efficiency, and engagement. The specific objectives are:

- Identify and analyse the job roles and skill levels.
- Formulate a comprehensive framework to foster skill development.
- Evaluate the effectiveness of the framework in accomplishing the stated objectives.

4. Skill Development Theories

These theories provide different perspectives on how individuals acquire and develop skills, offering valuable insights for Educators, Trainers, and HRD (Human Resource Development) professionals in understanding the learning process. It is essential to recognise that skill development is a multifaceted process influenced by cognitive, behavioural, social, and experiential factors (Johnson, 2003).

(i) ***Social Cognitive Theory:*** Developed by Albert Bandura, Social Cognitive Theory emphasises the role of observational learning, imitation, and modelling in the acquisition and development of skills. It posits that individuals learn from observing others and that self-efficacy plays a crucial role in skill development.

(ii) ***Human Capital Theory:*** Associated with Gary Becker, views individuals as capital investments. Investments in education, training, and skill development contribute to the accumulation of human capital, leading to increased productivity and economic returns.

(iii) ***Experiential Learning Theory:*** Proposed by David Kolb, Experiential Learning Theory posits that learning is a continuous process involving concrete experience, reflective observation, abstract conceptualisation, and active experimentation. It emphasises the

importance of hands-on experience in skill development.

(iv) ***Self-Determination Theory:*** Developed by Edward Deci and Richard Ryan, this theory focuses on autonomy, competence, and relatedness in motivating individuals to develop and enhance their skills. People are more likely to develop skills when they have a sense of autonomy and competence.

(v) ***Goal Setting Theory:*** Edwin Locke and Gary Latham's Goal Setting Theory emphasises the role of specific, challenging goals in motivating individuals to improve performance and develop new skills. Setting clear and challenging goals enhances commitment and persistence in skill development efforts.

(vi) ***Competency-based Theory (CBT):*** A theory that centres on the idea that people are driven to engage in activities to develop or demonstrate their skills. Skills development is collaborative, drawing on insights from cognitive psychology, educational theory, and organisational behaviour. It involves ongoing research, practical application, and feedback from trainers, employers, and learners.

The author has selected the CBT model for this case study, as it is often considered more suitable for industry settings due to its practical and job-focused nature. It provides a practical and targeted framework for defining, developing, and assessing the skills and knowledge necessary for effective job performance. It aligns closely with these roles' specific demands and requirements, contributing to workforce productivity and success (Ericsson, 2018). Here are several reasons why competency-based theory is well-suited for industrial settings:

- Job Relevance
- Skill Emphasis
- Performance Measurement
- Training and Development Focus
- Adaptability to Changing Roles
- Standardization of Skills
- Alignment with Industry Standards

5. The Case Study

This case study was carried out in a typical PSU industry involved in design, manufacture and service. It involves surveying employees, supervisors, and managers to identify the job roles, skill levels, manpower engaged in each job role, skill gaps, etc., about a manufacturing and assembly shop. Based on the data collected, an analysis was carried out to prioritise the job roles for evolving a standard training framework. Accordingly, a systematic training framework was developed and implemented with the help of internal resources. Subsequently, an impact analysis was carried out to measure the effectiveness.

5.1 Skill Mapping

Fig-1

TABLE:1: Employee skill levels

Skill Level	LEVEL	MEANING
1	Basic	Lacks required knowledge and skill to perform the job
2	Average	Inconsistent in performance
3	Satisfactory	Performs as per the assigned job role under guidance.
4	Highly Effective	Performs independently and effectively as per job role.
5	Exceptional	Performs effectively and can also guide others.

Skill Mapping involves identifying the skill sets required for specific job roles and assessing the current skill levels (Fig-1) of employees in the organisation. These skill sets are required to operate effectively in a specific trade or job role (Dilip Chenoy, 2019). Skill mapping provides a platform to compare current and desired skill levels against an individual's competencies to perform tasks effectively to meet required standards. This process aids in evaluating individual skill gaps and identifying the subsequent training needs to bridge those gaps.

5.2 Skill Matrix

A comprehensive skill matrix was systematically developed, aligning job roles with the corresponding skill levels of employees. The primary objective was identifying job roles requiring urgent attention and prioritising training efforts accordingly. Upon careful analysis of the skill matrix, as depicted in Fig-2, a clear imperative emerged to address the developmental needs of employees in JR-5 to JR-8. This strategic decision is rooted in the observation that these job roles exhibit a significant skill gap among employees, necessitating immediate intervention. Subsequently, a standard training framework has been designed to

bridge these skill gaps and elevate the competency levels of employees to meet the organisational goals and objectives.

Job Role	Expert	Proficient	Average	Basic
JR-1	5	4	1	0
JR-2	4	6	1	1
JR-3	5	7	0	0
JR-4	4	7	1	0
JR-5	2	1	8	5
JR-6	1	2	6	7
JR-7	1	1	8	7
JR-8	1	2	5	8
JR-9	6	5	1	0
JR-10	3	7	1	1

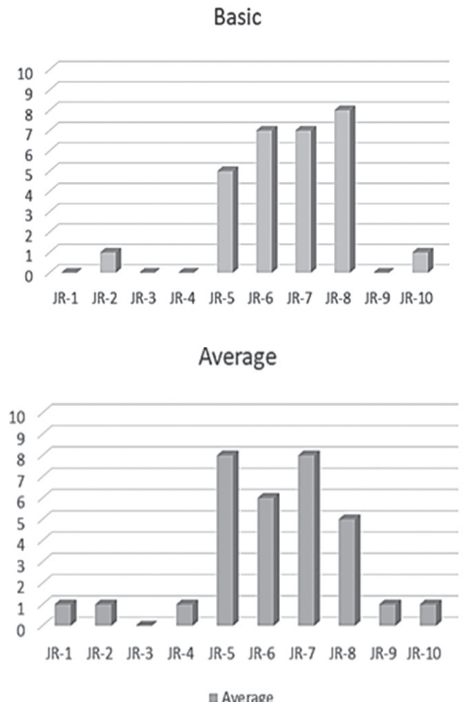


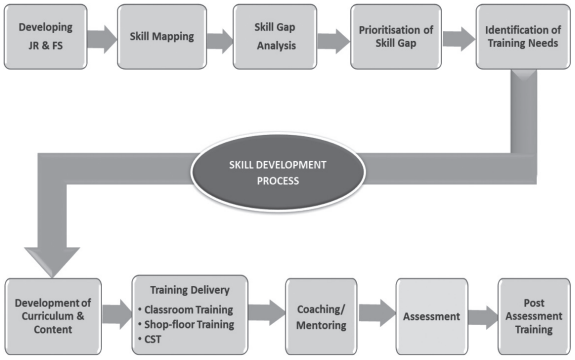
Fig-2

6. Skill Development Framework

By adopting a practical skilling framework, organisations can ensure employees remain adept at handling emerging technologies, leading to increased productivity and efficiency. Moreover, such initiatives contribute to talent retention, as employees are likelier to stay with an organisation that invests in their professional growth (Sousa, 2008). A well-structured skill development framework also aids in succession planning, identifies future leaders, and promotes a positive workplace culture, ultimately enhancing the organisation's ability to meet stakeholder expectations, comply with regulations, and navigate global competition (Premavasumathi, 2016). At the heart of the skilling framework lies the unique Skill Development Process (SDP), as detailed in this paper. This integration of a skill development framework represents a strategic investment in human capital. This not only enhances the workforce but also positions the organisation for sustained success in the long term.

7. Skill Development Process (SDP)

This includes the systems, procedures, standards, training and assessment process. It has been well-established and documented to ensure the effectiveness of training. SDP mainly comprises the development of Job role standards, Skill mapping, Skill gap analysis and then bridging the skill gap through Training and Development of the workforce. The training methodology consists of distinct stages, namely, Classroom Training (CRT), Shop floor training (SFT), Coaching and mentoring (CMT), Critical Skill Transfer (CST) and assessment (Fig-3). The intrinsic features of this process are explained below.

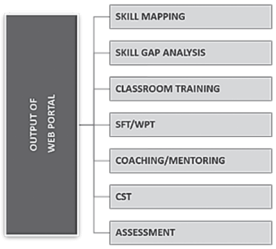


7.1. Digital integration

A dedicated web portal has been established to connect all departments within the organization. Through this portal, skill mapping and training-related databases are created, regularly updated, and maintained. The primary goal is continually enhancing employee skills by identifying and addressing skill gaps through regular mapping and assessment programs. Integrating all these activities across the industry, facilitated by an integrated web portal, ensures continuous learning and development opportunities for employees.

Key Features of this system include:

- The complete database of all the employees available at a single location.
- Separate login credentials are provided for all the stakeholders.



- Job Role standards are made available for the skill mapping.
- Skill gap identification and analysis for individual employee
- Training content and instructions are made available on the Portal.
- Complete MIS (Management et al.) reports can be generated, as illustrated in Fig. 4.

7.2. Development of Job Roles and Functional Standards

Job Role is a set of functional standards describing what Individuals need to do, know and understand to carry out a particular job role (Illeris, 2011). Functional Standards are statements of performance that the individual employee must achieve when carrying out the functions of a job role in the workplace, together with the specifications of the underpinning knowledge and understanding. Functional Standard comprises the following:

- Overview and a summary of the job standard.
- Performance criteria, which state the outcomes of competent performance.
- Knowledge and understanding are required to perform competently in the workplace.
- Parameters about Core Skills and professional skills.

8. Training Delivery

Training involves four modes, as listed below:

- Classroom Training (CRT)
- Shop-floor Training (SFT)/Workplace Training(WPT)
- Coaching/Mentoring (CMT)
- Critical Skill Transfer (CST)

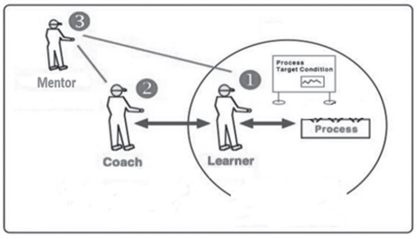
8.1. Classroom Training

Classroom Training is imparted by highly skilled master trainers who are domain specialists in the organisation. The selected persons are initially trained on various training and presentation skills to enhance their effectiveness in becoming Master Trainers. Classroom training effectively transfers theoretical knowledge and know-how to trainees with minimum resources within a short period (Jordan, 2012). The training programs are organised at the respective Departments using the available training facilities.

8.2. Shop- Floor Training/Workplace Training

This approach provides hands-on training to improve employees' practical skills. The training modules are specified in the curriculum developed to address skill gaps. Shop floor training is organised and overseen by the relevant shop supervisors, who are responsible for choosing suitable topics. Eligibility for shop floor training is limited to employees who have completed the corresponding classroom training. The web portal includes a feature that allows shop supervisors to plan and document the details of shop floor training sessions to ensure the database is ready for analysis.

8.3. Coaching and Mentoring



Imposing outdated management rules on today's diverse workforce is not advisable. Instead, we should actively seek new opportunities within the organisation to guide our workforce toward success (Tamkin, 2005). Employees can unlock their full potential and contribute significantly to the company through coaching and mentoring. Coaching and Mentoring is a specialised development approach that involves transferring knowledge and skills, aiming to enhance employee performance in their

respective job roles through guidance and continuous support. The objectives of this approach are:

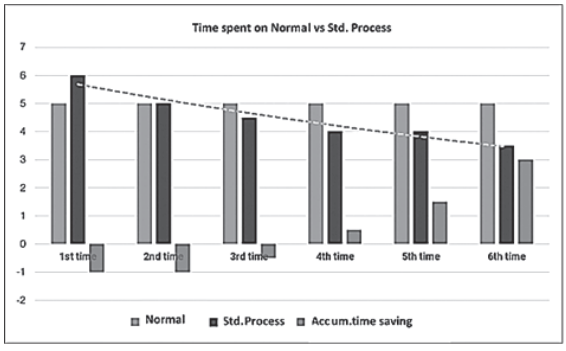
- To offer personalised attention and support to employees.
- To guide and mentor employees by constant interaction and handholding.
- To empower workers by equipping them with the necessary skills.

A two-level coaching and mentoring system was established in the organisation, wherein the supervisor serves as the coach for the employee at the first level, and the head of the department acts as the mentor at the next level, as illustrated in Fig-5.

8.4. Critical Skill Transfer (CST)

Critical skills are job-specific essential skills required to complete the tasks effectively. Acquired and enhanced through experience, these skills are indispensable for the organisation, as they improve overall company output while fostering employee engagement. An organisation is only as strong as its employees (Smita, 2016); if those employees lack critical skills, it becomes more challenging for the company to stay caught up with the competitors. The special knowledge and skills employees have learned on the job are considered a company's most valuable assets. Therefore, a special training approach known as CST has been developed to document and transfer these skills to other employees within the organisation, as detailed below.

8.4.1. Job Instructions



Job instructions/work instructions build and preserve the knowledge and skills about a job. When skills are passed verbally, diverse interpretations are likely by different people, leading to unavoidable human errors (Patil et al., 2021). The knowledge about performing a task correctly and efficiently is lost when a skilled employee leaves the organization. Good job instruction is essential to avoid all these shortcomings. The chart (Fig-6) shows the gradual reduction of cycle time using job instructions to perform critical tasks. This chart explicitly addresses time savings, yet the potential cost savings stemming from avoiding errors and rework could be significantly higher, depending upon the criticality of each job.

8.4.2. Special Features of CST

No._____

WORK INSTRUCTION DOCUMENT

Operation _____

Parts_____

Tools & Materials_____

IMPORTANT STEPS	KEY POINTS	REASONS
A logical segment of the operation when something happens to advance the work	Anything in a step that might – 1. Make or break the job 2. Injure the worker 3. Make the work easier to do, i.e. 'knack', 'trick', special timing, bit of special information	Reason for key points

Fig-7

The work instruction primarily captures the essential steps involved in a specific task. A standard template has been developed, as shown in Fig-7, to document the steps along with key points. This forms the basis for training new employees on those critical skills. CST is a fast and effective method for training the workforce to do a job correctly and safely. The main advantage of the CST method is that training is practical and realistic because the operational steps are demonstrated in real-life settings that encourage personalized, hands-on learning.

This method converts complex jobs into simple steps, enabling employees to carry out tasks easily. Eliminating complexity and potential hazards in the job enhances employee motivation and engagement, reflecting improved job satisfaction and loyalty towards the organization (Rupam Jyoti Deka, 2016).

9. Improvements Made in the Framework

The skill development framework implemented in the industry has undergone continuous refinement and enhancement to adapt to the evolving needs of the workforce. The key improvements made over the research period are listed here:

- ***Identification of Key Competencies:*** The framework has evolved through ongoing feedback mechanisms and periodic skill assessments to include more specific competencies critical to productivity and quality.
- ***Personalized Learning Paths:*** Recognizing the diverse learning needs of the workforce, the framework has transitioned from a one-size-fits-all approach to more personalized learning paths.
- ***Integration of Technology:*** Embracing technological advancements, the framework has incorporated digital learning platforms, virtual simulations, and online resources.
- ***Feedback Loops and Continuous Assessment:*** Including regular feedback loops and continuous assessment mechanisms has been a notable improvement.
- ***Emphasis on Soft Skills and Leadership Development:*** Acknowledging the growing importance of soft and leadership competencies, the framework has expanded its focus beyond technical skills.
- ***Accessibility and Inclusivity:*** In response to the changing nature of work and an increasingly diverse workforce, efforts have been made to enhance the accessibility and inclusivity of the skill development framework. This includes translations, accommodations for various learning styles, and culturally relevant content.

10. Impact of Implementation

Implementing the new skill development framework in the organization has resulted in notable benefits. The accompanying data highlights improvements in diverse performance metrics systematically deduced throughout the study. These positive outcomes validate the framework's effectiveness and affirm its effectiveness in fostering continuous growth and development in the organization.

- ***Increase in Productivity:*** A nearly 10% increase in overall productivity has been observed.
- ***Cost Savings:*** Significant cost savings due to reduced rejection/rework.
- ***Quality improvement:*** Over 25% reduction in defects and quality-related issues.
- ***Reduction in cycle time:*** The cycle time for critical parts has been reduced to nearly 15%.
- ***Increase in customer satisfaction:*** Significant reduction in customer complaints.
- ***Employee engagement:*** Resounding positive feedback affirms the employee support for this new skill development approach.

Conclusion

The emergence of a new skill development framework in a public sector enterprise has proven to be a transformative approach to enhancing employee competence. The systematic methodology in this framework reflects the strategy of maximizing the effectiveness of Training and development initiatives. The positive outcomes observed in various performance metrics underscore the importance of establishing a robust training framework for improving employee engagement and overall performance. In the dynamic landscape of organizational evolution, adopting innovative and tailor-made training approaches to meet global standards becomes crucial for enduring success and heightened competitiveness. The new training framework places the skilled workforce at the forefront of performance excellence and fortifies its agility and resilience in navigating the complexities of the ever-changing business environment.

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Article

Development of Tacit Knowledge Management Themes Using Existing Literature and KJ Methodology

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Abstract

ABSTRACT

Knowledge is an immensely valuable asset of any organisation and often needs to be better leveraged. Tacit knowledge management (TKM) is more strategic as people make all the difference to an organisation. However, their tacit knowledge needs to be better managed in capturing and using the same. The current study considers the TKM conceptual model from the literature and verifies the elements of the model by analysing the keywords from the relevant research papers. KJ method of Affinity is used to analyse the keywords data. The study also adds three new themes and modifies the TKM conceptual model, an essential addition to the current body of knowledge. This conceptual model serves the important purpose of structuring the current research on Tacit knowledge and guides future researchers on themes of strategic importance to the organisations.

Key words: *Tacit knowledge management, themes, KJ Method, Conceptual model, Key words from literature*

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1. Introduction

Organisational knowledge is nothing but the collective knowledge of its human resources. Knowledge, which is part of individuals, manifesting in many forms like experience, intuition, etc., is such an entity that is very precious and very hard to explicate. Organisations lose this valuable asset when experienced people either retire or resign.

There was a substantial knowledge loss to many organisations during the COVID pandemic due to experts' deaths and a sudden and unplanned exit of experts. This has made many industries start looking at their knowledge management strategies., especially tacit knowledge management (TKM).

The importance of TKM is well captured in the literature. The business environments are extremely VUCA (Volatile, Uncertain, complex and ambiguous). Such an environment demands a significant and strategic role for TKM, within and outside the organisations (Polanyi, 1962,1967; Venkitachalam & Busch, 2012).

Bush and Tiwana (2005) articulated that most organisational knowledge is not fully exploited as it is mainly in the heads of the people but needs to be better captured in reusable documents like procedures and standards.

While Explicit knowledge is all about knowledge captured and demonstrated as standards, procedures, guidelines, etc., organisations most often succeed due to the tacit knowledge of the individuals, which is used to solve various organisational problems. The biggest challenge is that the tacit knowledge of such experienced experts is tough to convert to explicit knowledge, as well as effective reuse of such captured knowledge.

Many industries also need help finding their problem with w.r.t managing their knowledge resources if they need a formal Knowledge management team. If an organisation wants to start its tacit knowledge management journey, there needs to be a clear structure that can guide it. This study aims to arrive at potential themes of tacit knowledge management using current literature in this domain. When developed and detailed, these themes can guide organisations regarding their challenges and the way forward in their TKM journey.

Jayaram and Bhatta (2023), in their study on the systematic literature research paper, have considered research articles across the industry in the domain of Tacit knowledge management. In their work, they have used the PRISMA framework. They have used EBSCO to arrive at relevant papers. Keywords used for searching are "Tacit knowledge management", "Tacit knowledge", and "knowledge sharing". The timeline is between 2010 and 2021 from the journals with A, B, and C ratings (ABDC ratings). The search has resulted in all 250 journal articles. Their study also did independent research to identify another 121 papers from A and A+ rated journals. Out of 362 records considered for their search, they have zeroed in on 50 highly relevant articles with an average citation of more than 20. In their paper, they have articulated that they have used keywords from these 50 articles and analysed the same to arrive at the following themes: Tacit knowledge concept evolution, Barriers to knowledge sharing, Tacit knowledge acquisition process – various methods, Role of context in tacit knowledge sharing, enablers for tacit knowledge sharing, IT for Explicit knowledge sharing & reuse.

Their paper needs to detail how these themes arrive, and it attempts to use the keywords of the 52 articles considered and arrive at the themes using a language processing tool, in this case, the KJ Method of affinity. The current study confirms the themes Jayaram and Bhatta (2022) arrived and adds a few more themes.

Methodology

To develop potential themes for Tacit Knowledge management, the data will be the keywords from several research articles carefully collected from the literature.

Data collection

The Keywords from each research article are captured and captured in Table 1. Each article was further studied to find relevant keywords, wherever applicable. Columns 3 and 4 of Table 1 detail all the keywords captured from 52 research articles. As this study aims to arrive at themes of TKM, keywords captured are analysed for their potential to contribute towards a specific theme. If it has the

potential, it is considered relevant keywords after suitably modifying wherever needed without losing the essence of the keywords. These processed keywords are captured in column 5 of Table 1.

Data analysis

The keywords of column 5 are the language data which needs to be analysed to develop potential themes coming out of the data. We used the KJ (Named after Jiro Kawakita) method of affinity to analyse the language data to arrive at the themes. The KJ method is an effective research method, a helpful problem-solving tool, and, sometimes, a planning tool for different fields (Kawakita, 1970). Initially, KJ Method was developed to study and interpret ethnographic data in Nepal (Scupin,1997). KJ Method builds further upon Charles Pierce's notions of abduction and depends on intuitive non-logical thinking. Plain (2007) described the KJ affinity diagram as a powerful and effective tool for organising language data into easily manageable and meaningful groups.

The following process was adapted using the KJ method by a team of authors::

a. Capture each keyword (s) on a small piece of paper
b. Pick up a keyword and place it on a large cardboard sheet.
c. Pick another keyword and check if it belongs to an already placed keyword (s). Use more intuition than logic to check the belonging to an already existing word or group of words
d. Place it along with the already placed keyword if it belongs to it, or else place it at another place in the cardboard.
e. This way, many groups get formed by placing similar affinity keywords.
f. If a picked keyword does not belong to any of the groups formed, place them at the bottom of the cardboard sheet.
g. When you exhaustly place all the keywords on cardboard, we see nine groups forming.
h. Each group is named appropriately based on the keywords belonging to the group

The outcome of the above process is shown in the Fig 1 to Fig 9

Results

Adopting the above methodology, the following themes and sub-themes have emerged through the application of the KJ method of affinity on language data consisting of Keywords.

1. Tacit Knowledge evolution. (Fig 1)

-Knowledge evolution
-Knowledge flow

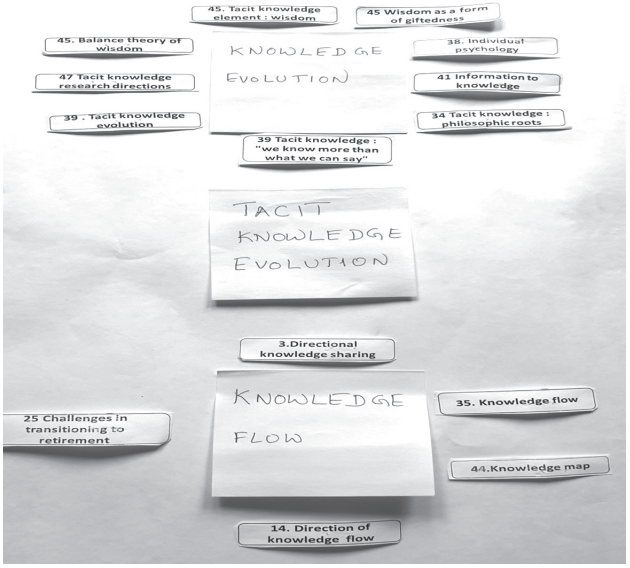

Fig. 1 Tacit knowledge evolution

The knowledge evolution sub-theme contains the concepts of roots of knowledge evolution, concepts of wisdom theory, wisdom as a tacit knowledge element, tacit knowledge research directions, etc.

The second element is the directional knowledge flow. Knowledge flow direction is vital in developing knowledge, especially tacit knowledge. A knowledge map enables an organization to manage its knowledge through adequate directional flows, both vertical and horizontal.

2. Knowledge sharing Barriers (Fig 2)

- Individual
- Organisational
- Technological
- Cultural

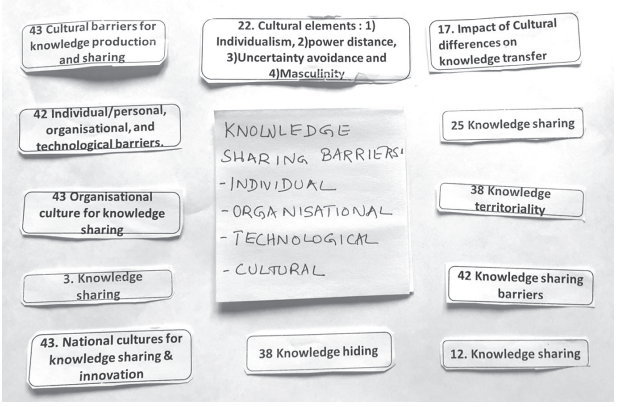

Fig. 2 Knowledge sharing barriers

Knowledge-sharing among their employees is always a big challenge for every organisation. This theme covers many types of barriers: Individual, organisational, and technological. Among cultural barriers, national and organisational cultures are prominent.

3. Tacit Knowledge capture methods (Fig 3)

Nonaka's SECI Model

Interview / Depth Interview

Story telling

Cognitive Modeling

Information & Knowledge Audits

Community of Practice

Knowledge Networks

Learning History

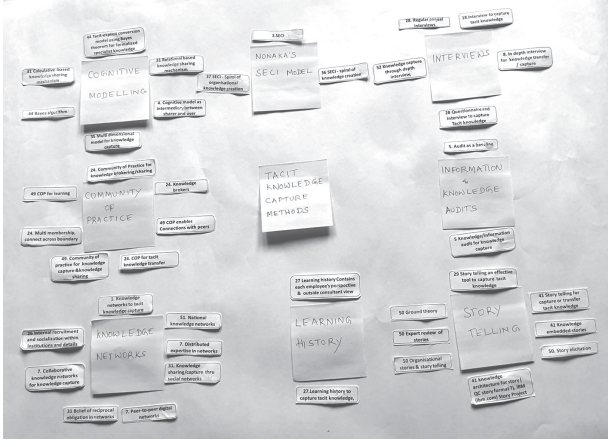

Fig. 3 Tacit knowledge capture methods

The methods for converting tacit knowledge into explicit knowledge are well-researched. The current study brought out eight of them from the keyword analysis.

a. Cognitive modelling is a method where a multi-dimensional model is created using the tacit knowledge of the specialists. These models are like a transfer function between the sharer and user of the knowledge.

b. Nonaka's SECI model is a powerful concept where an organisation creates knowledge using four modes of knowledge conversion. Japanese organisations successfully use it to convert an individual's tacit knowledge into an organisation's explicit knowledge.

c. L earning History is a concept developed by the MIT team. It develops a narrative used to learn from the organisation's successes and failures. It contains the learning perspectives of the concerned employees and expert outside consultants. This captured organisational knowledge is used to prevent the recurrence of past problems.

d. Community of practice works as a formal group of people with expertise in a given domain. These people in the group also have a shared passion for developing, retaining, and transferring expertise across the organisation. This also works as a good and natural network among the various experts across the group. Knowledge brokers are essential in enabling an organisation's successful transfer of knowledge.

e. Information and knowledge audit is a strategic initiative to understand the knowledge sources and pockets in critical domains in organisations. This is done periodically to manage internal knowledge resources to meet an organisation's strategic goals.

f. Knowledge networks are the ones that are formed across organisations on topics of strategic and shared interests. These networks can be formal or informal if the members are passionate. They share knowledge among them, including tacit knowledge. These differ from Community of Practice, which are specific to an organisation. Collaboration and belief in reciprocal obligation are crucial to the success of knowledge networks.

g. Storytelling is a powerful method to transfer tacit knowledge. Organisations capture their success and failure learnings in stories, which are effective in transferring embedded tacit knowledge. The way stories are told is essential for the effective use by the knowledge receiver. The format in which stories are captured and told is critical for their success as a tacit knowledge-capture mechanism.

h. Interview or In-depth interview is one effective means to capture the tacit knowledge of an individual being interviewed. The role of the interviewer is very crucial. The interviewer's communication skills, questionnaire preparation, responsiveness, and knowledge of the expert's domain will play an essential role in the success of capturing the tacit knowledge.

4. Enablers & Motivators for knowledge sharing (Fig 4)

a. Organisational Strategy for Knowledge management

b. Trust: Individual & Organisational

c. Organisational culture of Knowledge sharing

d. Organisational learning culture

e. Organisational structure and processes

a. Organisational strategy for knowledge management is a crucial sub-theme. This includes identifying strategic roles for tacit knowledge management, organisation design and processes, planning, etc., to prepare the organisation for this initiative.

b. Trust in an Individual and an Organisation plays a vital role in sharing and using the knowledge. While affect-based trust enables knowledge sharing, cognition-based trust enables knowledge reuse. Both organisations and knowledge-based trust affect knowledge sharing and usage.

c. Organisational culture of Knowledge sharing is an essential enabler for knowledge sharing. National culture also has a significant influence on organisational culture and, hence, on knowledge sharing.

d. Organisational learning culture is one of the significant enablers for a knowledge organisation. A well-entrenched learning culture will always motivate the employees to look for opportunities to learn, which includes knowledge reuse. This culture will also support knowledge sharing, as employees understand the power of knowledge for both individuals and organisations.

e. Organisational structure and processes are all about providing an appropriate structure for knowledge management to be very effective. This also includes management processes, providing an environment for knowledge production and sharing, enabling, constructing, transforming, and modifying knowledge, etc.

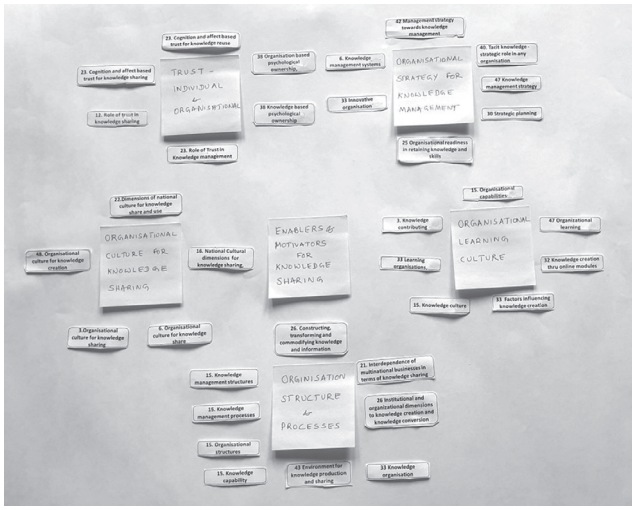

Fig. 4 Enablers and Motivaotrs for knowledge sharing

5. Information Technology for Explicit Knowledge capture & Reuse (Fig 5)

- Information Technology Infrastructure for Knowledge Management
- Knowledge Capture Protocols

a. **Information Technology infrastructure** for KM is all about IT systems, big data of knowledge, IoT with embedded knowledge, and Knowledge codification for enabling the use of IT.

b. Knowledge capture protocols are basically for structuring knowledge for IT use. The knowledge exchange protocols are prepared and used to capture all the relevant knowledge in a structure that IT systems can process and recall when a user needs it.

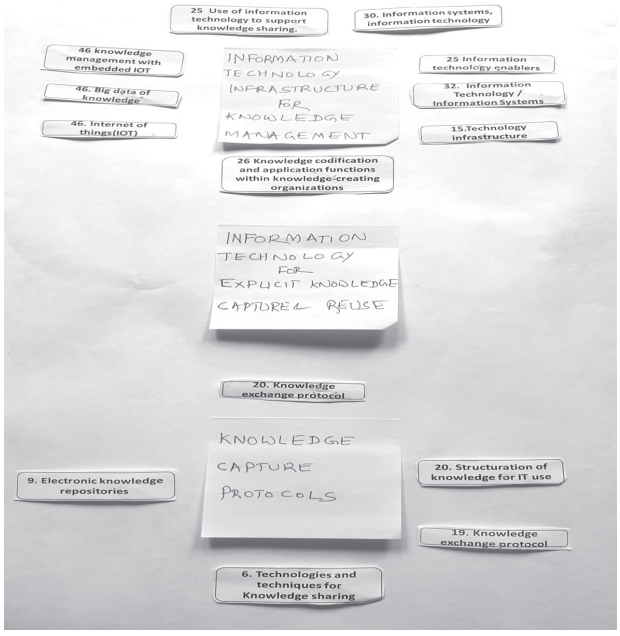

Fig. 5 Information Technology for Explicit knowledge capture & Reuse

6. Knowledge Reuse. (Fig 6)

Knowledge reuse is crucial for every organisation as this is what benefits them. A culture of knowledge seeking to improve performance needs to be nurtured. Cross-cultural impact is also essential for knowledge reuse. Knowledge reuse continues to be a challenge for many organisations.

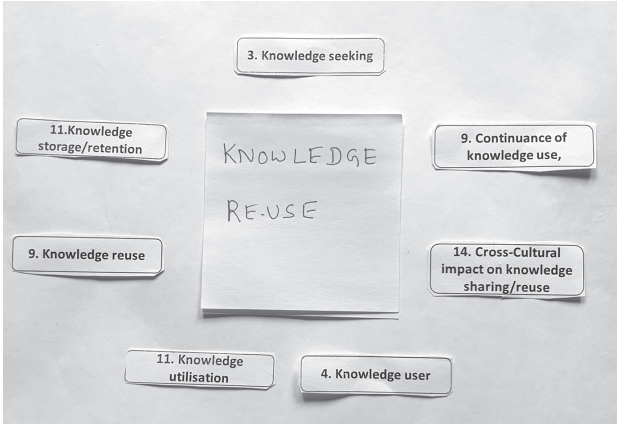

Fig. 6 Knowledge Reuse

7. Knowledge Resources (Fig 7)

Knowledge resources in tacit knowledge management are central themes. Organisations must define their intellectual capital regarding knowledge elements like Experience, intuitions, beliefs, etc. Then, they must also identify subject matter experts or knowledge workers as knowledge sources whose knowledge is valuable to the organisation and needs to be captured for reuse. It needs to be leveraged to maintain these experts' inventory and knowledge.

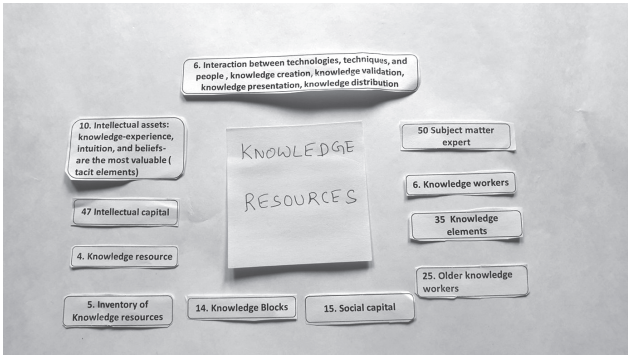

Fig. 7 Knowledge Resources

8. Role of Context in Knowledge recall & Sharing (Fig 8)

The role of context is an important element in knowledge recall and sharing. People need context to recall experiences or knowledge of theirs. So, context acts like a trigger. There is a strong relationship between IT systems and organisational context in managing Knowledge.

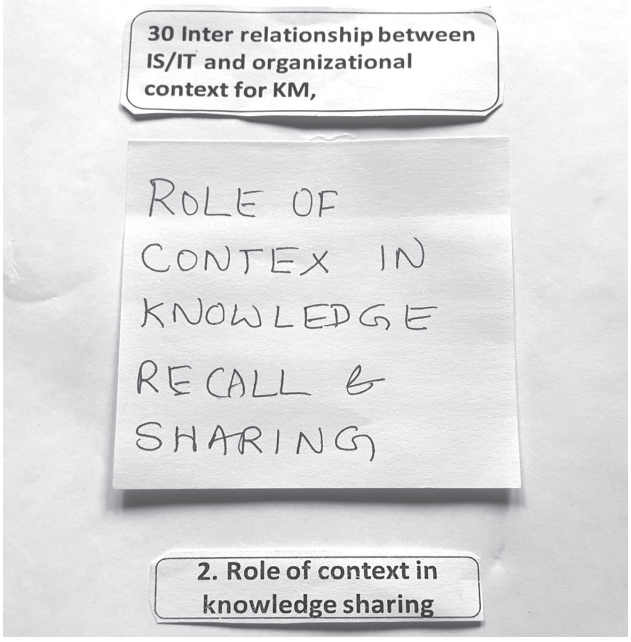

Fig. 8 Role of context in Knowledge recall & Sharing

9. Knowledge Identification (Fig 9)

Knowledge identification in an individual is one of the least researched topics. It is a first step in TKM, i.e., identifying in an individual what is a relevant and transferable skill or knowledge. Once such knowledge is identified, the next step of capturing comes into place.

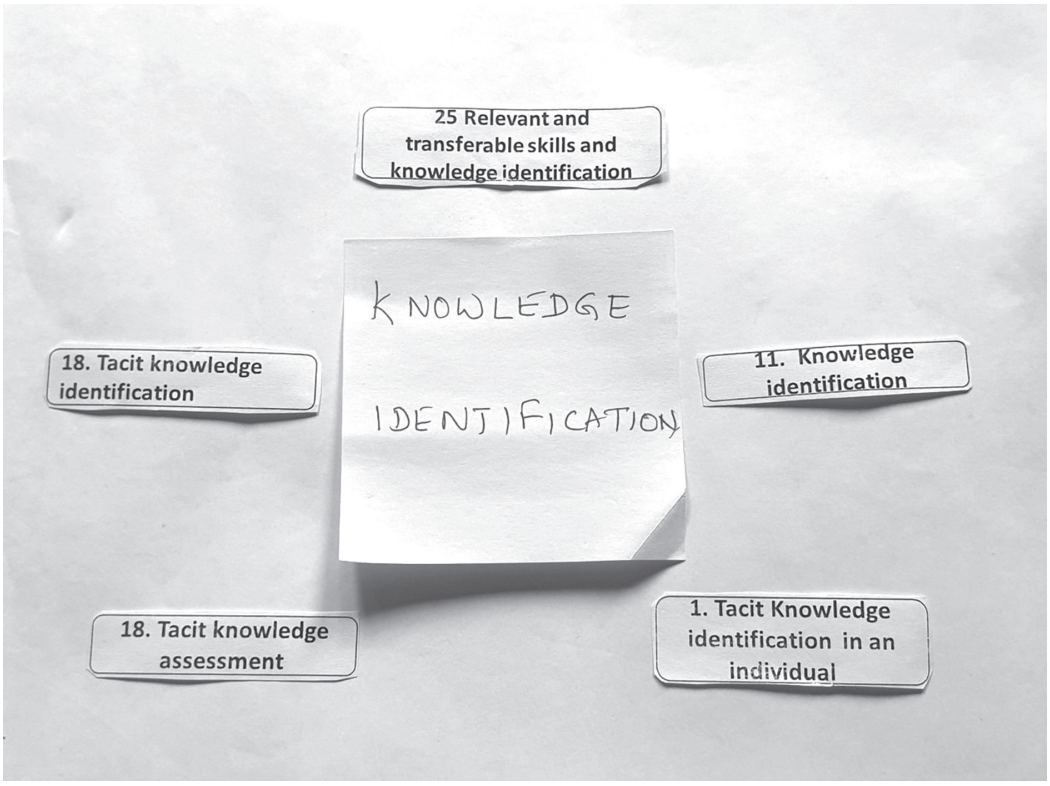

Fig. 9 Knowledge identification

Discussions

The objective of the current study is to arrive at various themes of tacit knowledge management using keywords from identified relevant literature. The keywords are used as language data, and the KJ method of affinity is used to analyse the same and arrive at various themes given in the previous chapter. Jayaram and Bhatta (2022) also identified similar themes in their work. However, the current study adds to their work in the following themes / sub-themes. Table 2, given below, compares the themes in the current study with the work of Jayaram and Bhatta (2022).

Table 2 : Comparison of current research outcomes wrt the literature

	Themes arrived in the current study	**Themes arrived by Jayaram & Bhatta (2022)**
1	**Tacit Knowledge evolution :** -Knowledge evolution -Knowledge flow	**Tacit knowledge concept evolution** - Tacit knowledge evolution
2	**Knowledge sharing Barriers :** - Individual - Organisational - Technological - Cultural	**Barriers for Knowledge sharing :** - Individual - Organisational - Technological - Cultural
3	**Tacit Knowledge capture methods:** Nonaka's SECI Model Interview / Depth Interview Story telling Cognitive Modeling Information & Knowledge Audits Community of Practice Knowledge Networks Learning History	**Tacit Knowledge capture methods:** Nonaka's SECI Model Interview / Depth Interview Story telling Cognitive Modeling Information & Knowledge Audits Community of Practice Knowledge Networks Learning History
4	Role of Context in knowledge sharing	Role of Context in Knowledge sharing
5	**Enablers & Motivators for knowledge sharing :** - Organisational Strategy for Knowledge management - Trust : Individual & Organisational - Organisational culture of Knowledge sharing - Organisational learning culture - Organisational structure and processes	**Enablers for tacit knowledge sharing :** - Motivation for sharing tacit knowledge - Role of trust in sharing tacit knowledge
6	**Information Technology For Explicit Knowledge capture & Reuse :** - Information Technology Infrastructure For Knowledge Management - Knowledge Capture Protocols	**IT for Explicit knowledge capture and reuse :** - " Captured Knowledge" protocol for IT Processing - Knowledge reuse portals
7	**Knowledge resources**	
8	**Knowledge reuse**	
9	**Knowledge identification**	

From the Table 2, we can infer the following:

1. The themes arrived in the current study, in rows 2,3,4, i.e., Knowledge sharing barriers, Tacit Knowledge capture methods and the role of the context in knowledge sharing, are precisely the same as found in the existing literature.
2. The tacit knowledge evolution theme (row 1) had an additional sub-theme, i.e., knowledge flow.

3. "Enablers for tacit knowledge sharing" (row 5) had a minor modification as "Enablers and Motivators for knowledge sharing". In addition, the current study brought out five sub-themes instead of two.
4. IT for explicit knowledge capture and reuse (row 6) has slightly modified sub-themes compared to the literature.
5. The current study revealed three new themes: knowledge resources, knowledge reuse and identification.

With the modified / new themes and sub-themes, the revised TKM conceptual model is shown in Fig 10.

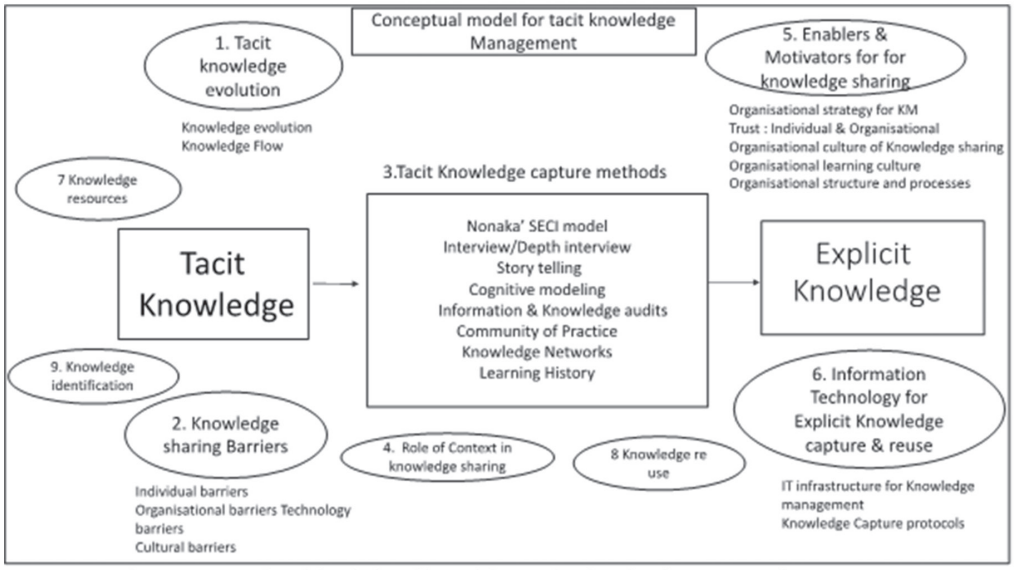

Fig. 10. Revised TKM conceptual model with the additional themes developed in the current study

Conclusions

Knowledge management is an important journey every organization wants to take up, especially tacit knowledge management. The challenge had been a need for more structure and overall scope of TKM. The current study attempts to add themes /sub-themes, which are the elements of the TKM model, and revise the same appropriately. This is a novel contribution to the current body of knowledge. The study also uses language data processing techniques, namely, the KJ affinity method.

Limitations and future recommendations

The research paper uses keywords from selected research papers based on PRISMA criteria. However, future researchers can use different search keywords to arrive at research papers and conduct this study. This might arrive at a new theme, and accordingly, the TKM conceptual model (Fig 10) can be continuously revised, guiding future researchers.

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Appendix 1

Table 1 . Key words extractd from selected research articles

Sl No	Research article authors	Research article number in reference	Key words (given in the article)	Additional Key words	Processed key words
1	Augier, M., & Vendelø, M. T. (1999)	1	Change, Cognition, Improvisation, Networks, Tacit knowledge	Tacit dimension of knowledge, knowledge and networks	1. Tacit knowledge, knoweldge networks tacit knowledge capture, tacit Knoweldge identification in an individual
2	Augier, M., Shariq, S. Z., & Vendelø, M. T. (2001)	2	Knowledge discovery, Problem solving, Organizational processes, Dissemination	Context and contextualization, role of context in knowledge sharing	2. Role of context in knowledge sharing
3	Baker, A. M. (2022)	3	Knowledge sharing, knowledge seeking, knowledge contributing, horizontal knowledge sharing, vertical knowledge sharing, SECI, Organisational culture	NA	3. Knowledge sharing, knowledge seeking, knowledge contributing, SECI, Organisational culture for knowledge sharing, Directional knowledge sharing
4	Belkin, N. J. (1984)	4	Not given	Information transfer, user, knowledge resource, intermediay mechanism, Cognitive model as intermediary,	4. Knoweldge transfer, Knowledge user, Knowledge resource, Cognitive model as intermediary between sharer and user
5	Bright, C. (2007)	6	AUDITS, BUSINESS, DOCUMENTATION, INVENTORIES, RECORDS MANAGEMENT, KNOWLEDGE MANAGEMENT, SAFETY,RESOURCES, UNITED KINGDOM	Knowledge audit, Inventory of knowledge resources, well defined scope, Audit as a baseline, Information audit,	5. Knowledge/information audit for knowledge capture, Inventory of Knowledge resources, Audit as a baseline
6	Bhatt, G. D. (2001)	5	Information technology, knowledge management, knowledge workers, knowledge management systems, interaction	Knowledge creation, knowledge presentation, knowledge validation, knowledge application activities, knowledge distribution, technologies, organizational culture, and techniques	6. Knowledge management systems, knowledge workers, Interaction between *technologies, techniques, and people* , knowledge creation, knowledge presentation,knowledge validation , knowledge distribution, , Technologies and techniques for Knowledge sharing,Organisational cuture
7	Bush, A. A., & Tiwana, A. (2005)	7	Not given	Distributed expertise,peer-to-peer digital networks, collaborative knowledge networks	7. Distributed expertise in networks , peer-to-peer digital networks, collaborative knowledge networks
8	Chahab, M. (2007)	9	Not given	Tacit knowledge , exiplicit knowledge, in depth intrview,	8. Tacit knowledge , exiplicit knowledge, in depth intrview for knowledge transfer / capture
9	Chhim, P. P., Somers, T. M., & Chinnam, R. B. (2017)	8	PLS-SEM, knowledge management, knowledge sharing, continuance of use, knowledge reuse, electronic knowledge repositories	NA	9.knowledge management, knowledge reuse, knowledge sharing, electronic knowledge repositories , continuance o use
10	Davenport, T. H., & Prusak, L. (1998)	10	Not given	Knowledge , sustainable source of competitiveadvantage, intellectual assets,intuition, the human qualities like knowledge-experience, and beliefs-are the most valuable (tacit elements)	10. Intellectual assets: knowledge-experience, intuition, and beliefs-are the most valuable (tacit elements)
11	Durst, S., & Edvardsson, I. R. (2012)	11	Knowledge management, Systematic review, Small to medium-sized enterprises, Research, Entrepreneurship	knowledge identification, Knowledge transfer, knowledge storage/retention and knowledge utilisation	11. knowledge transfer, knowledge identification, knowledge storage/retention and knowledge utilisation
12	Evans, M. M. (2013)	13	Knowledge sharing, trust, Shared vision, Shared lanugage, relationship strength, tie strength,empirical study, homophily, professional service firm, human and social enabless, law firm, knowledge management	NA	12. Knowledge sharing, Role of trust in knowledge sharing, knowledge management
13	*Elias M award and Hassan M Ghaziri*	*12*	Explicit knowledge, tacit knowledge	NA	13. Explicit knowledge, tacit knowledge
14	Ford, D., & Chan, Y. (2002)	14	Knowledge Sharing, Knowledge Management, Cross-Cultural, Knowledge Blocks, Case Study, direction of knowledge flow	NA	14. Knowledge Sharing, Knowledge Management, Cross-Cultura impact on knowledge sharing/reusel, Knowledge Blocks, direction of knowledge flow
15	Gold, A. H., Malhotra, A., & Segars, A. H. (2001)	15	knowledge culture, Knowledge capability, knowledge management processes, knowledge management structures, organistional structures, organisational capabilities, Social capital, technology infrastructure, structural equation modeliing,	NA	15. Knowledge capability, knowledge culture, knowledge management processes, knowledge management structures, organisational capabilities, organistional structures, Social capital, technology infrastructure
16	Hauke, A. (2004)	16	Not given	Knowledge sharing, Cultural dimensions, emperical investigation,	16.Knowledge sharing, National Cultural dimensions for knowledge sharing,
17	Hauke, A. (2006)	17	Cultural differences, knowledge transfer	NA	17. Impact of Cultural differences on knowledge transfer
18	Hedlund, J., Forsythe, G. B., Horvath, J. A., Williams, W. M., Snook, S., & Sternberg, R. J. (2003)	18	Not given	Tacit kowledge, Tacit knowledge identification, Tacit knowledge assessment, Inetrview ,	18. Tacit kowledge, Tacit knowledge identification, Tacit knowledge assessment, Inetrview to capture tacit knowledge

19	Herschel, R. T., Nemati, H., & Steiger, D. (2001)	19	Knowledge management, exiplicit knowledge, tacit knowledge, knowledge transfer	Knowledge exchange protocol	19. Knowledge management, exiplicit knowledge, tacit knowledge, knowledge transfer, knowledge exchange protocol
20	Herschel, R., Nemati, H., & Steiger, D. (2003).	20	knowledge management, Explicit knowledge, strcturation, knowledge exchange protocol, tacit knowledge	Structure of protocol , structure protocol deployment	20. Explicit knowledge, knowledge exchange protocol, knowledge management, strcturation of knowledge for IT use, tacit knowledge
21	Hill, C. (2008)	21	Not given	International business, Interdependent of multinations	21. Interdependent of multinations businesses in terms of knowledge sharing
22	Hofstede, G. (1984)	22	Not given	Dimensions of national culture, power distance, Individualism, Uncertainty avoidance and Masculinity	22.Dimensions of national culture for knoweldge share and use, Cultural elements :1) Individualism, 2)power distance, 3)Masculinity and 4) Uncertainty avoidance
23	Holste, J. S., & Fields, D. (2010)	23	Trust, Knowlegdege management	Cognition and affect based trust, knowledge sharing aand reuse	23. Role of Trust in Knowlegdege management, Cognition and affect based trust for knowledge sharing , Cognition and affect based trust for knowledge reuse
24	Ishiyama, N. (2016)	24	Community of Practice,career adaptbility, knowledge brokering, knowledge brokers, gate keepers, multi membership	Connect across boundary, tacit knowledge transfer	24. Community of Practice for knowledge brokering/sharing, , knowledge brokers, multi membership connect across boundary, COP for tacit knowledge transfer
25	Joe, C., & Yoong, P. (2006)	26	Older workers, knowledge sharing, knowlegde transfer, information technology	Challenges in transitioning to retirement,organisational readiness in retaining knowledge and skills, relevant and transferable skills and knowledge, the use of information technology to enable knowledge sharing.	25. Older knowledge workers,knowledge sharing, knowlegde transfer, information technology enablers, , relevant and transferable skills and knowledge identification, , organisational readiness in retaining knowledge and skills, challenges in transitioning to retirement, the use of information technology to enable knowledge sharing.
26	K. Kakabadse, N., Kouzmin, A., & Kakabadse, A. (2001)	27	Not given	Constructing,Chief Knowledge Officer, transforming and commodifying knowledge and information, institutional and organizational dimensions enabling knowledge creation and knowledge conversion,Chief Information Officer, internal recruitment and socialization within institutions , knowledge codification and applications within knowledge-creating organizations	26. Constructing, transforming and commodifying knowledge and information, institutional and organizational dimensions to knowledge creation as well as knowledge conversion, internal recruitment and socialization within institutions , knowledge codification and application functions within knowledge-creating organizations
27	Kleiner, A., & Roth, G. (1997)	29	Not given	Learning history, Contains each employee perspective, outside consultant view	27.Learning history to capture tacit knowledge, , Learning history Contains each employee perspective, outside consultant view
28	Košir, S., & Jecel, B. (2014)	30	Regular annual interviews, public institution, knowledge management, human capital, communication, quality	Questionnaire and interview, development of employees , development of the organization	28. Regular annual interviews, knowledge management, Questionnaire and interview to capture Tacit knowledge
29	*LeBlanc, S. M., & Hogg, J. (2006)*	*31*	Not given	Knowledge management, story telling, effective tool, tacit knowledge	29. Knowledge management, story telling an effective tool to capture tacit knowledge
30	Lee, G. G., & Bai, R. J. (2003)	32	Information systems, information technology, Strategic plannig	Practical implementation, interrelationship between IS/IT and organizational context,	30. Information systems, information technology, Strategic plannig,interrelationship between IS/IT and organizational context for KM,
31	Lin, S. W., & Lo, L. Y. S. (2015)	33	Knowledge sharing, Belief of reciprocal obligation, social networks, Relational based mechanism, Calculative -based mechanism,	Relational deposits, Relational withdrawals	31. Knowledge sharing/capture thru social networks, Calculative -based mechanism, Belief of reciprocal obligation, Relational based mechanism
32	Mariano, S., & Awazu, Y. (2016)	34	Systematic Literature Review, Artifacts, Information Systems, Information Technology, , Knowledge Management, Knowledge Transfer, Knowledge Sharing, Boundary Objects	Online learning, knowledge creation	32. Information Systems, Information Technology, , Knowledge Management, Knowledge Transfer, Knowledge Sharing, knowledge creation thru online modules
33	Merx-Chermin, M., & Nijhof, W. J. (2005)	35	knowledge management, learning organisations, Innovation, , critical thinking, the netherlands	Knowledge organisation, innovative organisation, factors influencing knowledge creation	33 Learning organisations, knowledge management, knowledge organisation, innovative organisation, factors influencing knowledge creation
34	Mooradian, N. (2005)	36	Knowledge management, Tacit knowledge, Explcit knowledge	Tacit knowledge : philosophic roots	34. Tacit knowledge, Explcit knowledge, Knowledge management, Tacit knowledge : philosophic roots
35	Nissen, M. (2004)	37	Not given	Knowledge flow, multi dimensional model, knowledge elements,	35. Knowledge flow, multi dimensional model for knowledge capture, knowledge elements
36	Nonaka, I., & Takeuchi, H. (1995)	38	Not Applicable	Tacit knowledge , explicit knowledge, SECI, spiral of knowledge	36. Tacit knowledge , explicit knowledge, SECI - spiral of knowledge creation
37	Nonaka, I., & Takeuchi, H. (2007)	39	Not Applicable	Tacit knowledge , SECI, knowledge, spiral of knowledge, organisational knowledge creation	37. Tacit knowledge , explicit knowledge, SECI - spiral of organisational knowledge creation

38	Peng, H. (2013)	40	China, individual psychology, employees behaviour, knowledg based psychological ownership, knowledge management, organisation based psychological ownership, knowedge hiding, territoriality	NA	38. knowledge management, individual psychology, knowledg based psychological ownership, territoriality, organisation based psychological ownership, knowedge hiding
39	Polanyi M (1962)	42	Not given	Tacit knowledge, tacit knowledge evolution, "we know more than what we can say"	39. Tacit knowledge, tacit knowledge evolution, Tacit knowledge: "we know more than what we can say"
40	Polanyi M (1967)	42	Not Applicable	Tacit knowledge, strategic role	40. Tacit knowledge - strategic role in any organisation
41	*Reamy, T. (2002)*	*44*	Not given	Tacit knowledge, Story telling for capture or transfer tacot knowledge, inforamtion to knowledge, knowledge embedded stories, knowledge architecture for story (QC story format ?), IBM (ibm.com) Story Project ,	41. Tacit knowledge, Story telling for capture or transfer tacot knowledge, inforamtion to knowledge, knowledge embedded stories, knowledge architecture for story (QC story format ?), IBM (ibm.com) Story Project ,
42	Riege, A. (2005)	45	Knowledge management, Management strategy,	Knowledge sharing barriers, individual/personal, organisational, and technological barriers.	42. Knowledge management, Management strategy towards knowledge management, Knowledge sharing barriers, individual/personal, organisational, and technological barriers.
43	Rivera-Vazquez, J. C., Ortiz-Fournier, L. V., & Flores, F. R. (2009)	46	National cultures, knowledge sharing, innovation, organisational culture, knowldge management, puerto rico	Cultural barriers for knowledge production and sharing, environment for knowledge production and sharing.	43. National cultures for knowledge sharing & innovation, organisational culture for knowledge sharing, knowldge management, Cultural barriers for knowledge production and sharing, environment for knowledge production and sharing.
44	Śliwa, M., & Patalas-Maliszewska, J. (2015)	48	Knowledge map, explicit knowledge, tacit knowledge, man- ufacturing company, research and development department, Bayes algorithm	Tacit-explicit conversion model, formalized specialist knowledge,	44.knowledge map, tacit knowledge, explicit knowledge, Bayes algorithm ,tacit-explicit conversion model using Bayes theorem for formalized specialist knowledge,
45	Sternberg, R. J. (2000)	49	Not given	Wisdom, balance theory of wisdom, wisdom as a form of giftedness.	45. Tacit knowledge element : wisdom, balance theory of wisdom, wisdom as a form of giftedness.
46	Uden, L., & He, W. (2017)	50	Big data, internet of things, knowledge management	Knowledge management with embedded IOT	46. Big data, internet of things, knowledge management,knowledge management with embedded IOT
47	Venkitachalam, K., & Busch, P. (2012)	51	Tacit knowledge, Research, Implicit knowledge, Knowledge management	Organizational learning, intellectual capital, knowledge management strategy	47. Tacit knowledge,Tacit knowledge research directions, Implicit knowledge, organizational learning, knowledge management strategy,intellectual capital,
48	Wang, D., Su, Z., & Yang, D. (2011)	52	Not given	NA	48. Organisational culture, forknowledge creation
49	Wenger, E. C., & Snyder, W. M. (2000)	53	Not given	Community of practice, knowledge capture, knowledge sharing, learnng, Connections with peers,	49. Community of practice for knowledge capture &knowledge sharing,COP enables learnng, COP enables Connections with peers, ,
50	Whyte, G., & Classen, S. (2012)	54	Elicitation, ground theory, expert review, knowledge management , story telling, stories, tacit knowledge, subject matter expert, taxanomy, south africa	NA	50. Story elicitation, ground theory, expert review, stories, knowledge management , story telling, tacit knowledge, subject matter expert,
51	Wright, G. (2007)	55	Not given	National knowledge networks, technological progress, America,	51. National knowledge networks
52	Zikmund, W. G., Carr, J. C., & Griffin, M. (2013)	56	Not given	Knowledge management, knowledge capture, depth interview,	52. Knowledge management, knowledge capture through depth interview,

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