

**A Correlational Study between Motivation
and Learner Engagement among
Higher Education Learners**

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In Partial Fulfilment of the Requirement for the degree of
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Declaration

I, Deepa Bal, do hereby declare that the M.Ed. dissertation titled “**A Correlational Study between Motivation and Learner Engagement among Higher Education Learners**”, submitted to the University of Mumbai, Kalina, is an original work carried out by me and no part or whole of this has been submitted to this or any other University or Institution for award of any Degree or Diploma.

Date:

(Deepa Bal)

Place:

CERTIFICATE

This is to certify that the dissertation entitled “**A Correlational Study between Motivation and Learner Engagement among Higher Education Learners**” submitted to the University of Mumbai by Deepa Bal in partial fulfilment for the degree of Masters of Education is her own work carried out under my guidance and is worthy of examination

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Education plays an important role in the human resource development of any country. Citizens of India are the most valuable resource and workforce. Our billion-strong nation needs the nurture and care in the form of basic education to achieve a better quality of life. There is an absolute need for an all-round development of our citizens, which can only be achieved by building strong foundations in education.

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, and habits.¹

The word “Education” has been derived from the Latin terms “*Educatum*” which means the act of teaching or training, “*Educare*” which means “to bring up” or “to raise” and “*Educere*” which means “to lead forth” or “to come out”. All these meanings indicate that the main goal of education is to nourish the good qualities in man and draw out the best in every individual. Education strive for all round development of the innate capacities of man.²

The Sustainable Development Goals led down by United Nation are a universal call to action to end poverty, protect the planet, and improve the lives and prospects of everyone, everywhere. There are 17 Goals that were adopted by all UN Member States in 2015. The UN has recognized Quality Education as the 4th goal. According to UN, education enables upward socioeconomic mobility and is a key to escaping poverty. Over the past decade, major progress was made towards increasing access to education and school enrolment rates at all levels, particularly for girls.³

1.1.1 Education System in India

The central and most state boards uniformly follow the "10+2+3" pattern of education. In this pattern, study of 10 years is done in schools and 2 years in Junior college, then 3 years of graduation for a bachelor's degree. The first 10 years is further subdivided into 4 years of primary education, 6 years of High School followed by 2 years of Junior

¹ <https://en.wikipedia.org/wiki/Education>

² <http://ppup.ac.in/download/econtent/pdf/2.%20%20BCC%20%20Contemporary%20India%20and%20Education,%20Concept%20and%20Process%20of%20Education..pdf>

³ <https://www.un.org/sustainabledevelopment/>

colleges. This pattern originated from the recommendation of the Education Commission of 1964-66.

Figure 1.1 Education Structure in India

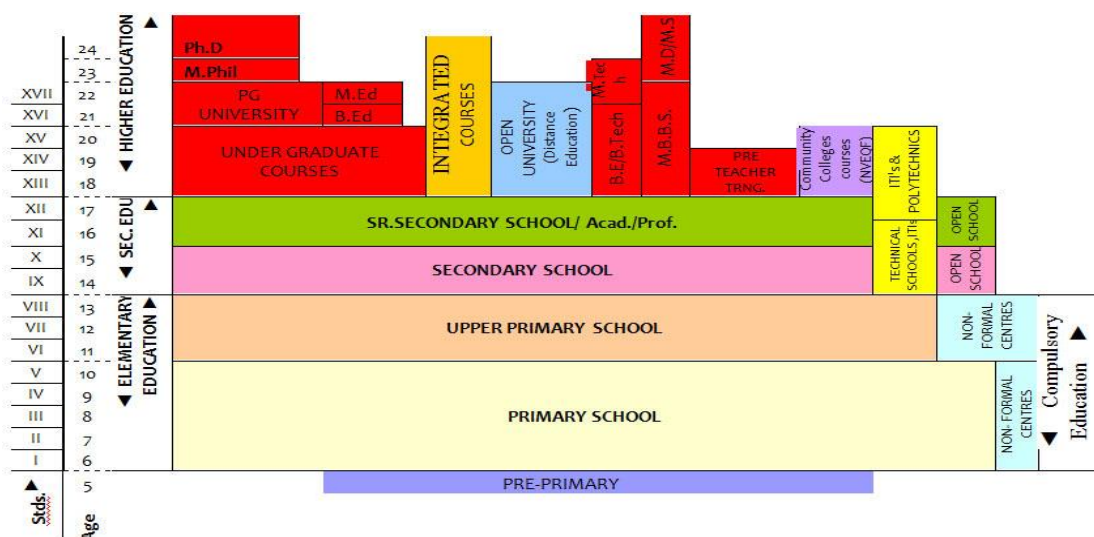


Image Courtesy: UGC.ac.in

1.1.2 Higher Education

Higher education is the tertiary education that leads to award of an academic degree. Higher education, also called as post-secondary education, third-level, or tertiary education. It is an optional final stage of formal learning that occurs after completion of secondary education.

According to the UN International Covenant on Economic, Social and Cultural Rights of 1966 in Article 13 declares that higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education.

All India Survey on Higher Education (AISHE 2015-16)⁴ defines higher education “as education, which is obtained after completing 12 years of schooling or equivalent, and is of duration of at least nine months (full time) or after completing 10 years of schooling and is of the duration of at least 3 years”. The education may be of the nature of “General, Vocational, Professional or Technical Education.”

The structure of Indian Higher Education is three-layered, consisting of Universities, Colleges and Courses. The universities and colleges work in unison with regulatory as

⁴ https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/AISHE2015-16.pdf

well as accreditation bodies to deliver standardized education Institutions imparting higher education in India include⁵

- Universities - central, state, public, private, deemed universities etc.;
- Institutions of National Importance – IITs, NITs etc.
- Open Universities - central open university, state open university, state private open university;
- Institutions under State Legislature Act - colleges both government aided & unaided and stand-alone institutions;
- Technical Institutes- institutes for PGDM, diploma level nursing training, diploma level teachers training and
- Institutions under Ministries, etc.

1.1.3 Importance of Higher Education

Higher education is an instrument for augmenting efficiency and technical expertise of human resources of a nation. It supports to bring the nation's valuable human resource at par with international standards in terms of intellectual and professional potential in order to meet the challenge of competitiveness and globalization. Education also plays a significant and remedial role in balancing the socio-economic fabric of a nation.

It was observed by Educational Statistics at a Glance (2016)⁶ that education is the single most significant factor that can ensure gender equality, gender parity, and empowerment. Equal opportunities provided through higher education to women can ensure gender equality and empowerment of women. The higher education has also ensured improved economic independence and better job opportunities (Sharma, Swarnima, 2018)⁷.

The decade of 1990s is recognised as an era of economic reforms and integration of the Indian economy at par with the global economies. One of the most vital parameters of globalization was access to free flow of technology. There was a growing urgency to keep pace with the technological improvement, and to flourish in the global competitive environment. To achieve this, there was a need for providing technical manpower and

⁵ <https://www.studyinindia.gov.in/about-indian-higher-education->

⁶ https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/ESG2016.pdf

⁷ Sharma, S. (2018). *Student engagement in higher education demographic personal and institutional determinants*. [Ph.D. Research Thesis: Panjab University]. <http://hdl.handle.net/10603/262039> <https://shodhganga.inflibnet.ac.in/handle/10603/262039>

professionals, which could be achieved through providing higher technical education to the Indian youth (Sharma, Swarnima, 2018).

1.1.4 World Wide Higher Education

An academic revolution has taken place in higher education in the past half century. It has been marked by transformations unprecedented in scope and diversity. The early 21st century has seen higher education as a competitive enterprise. In many countries students must compete for scarce places in universities. Admission to the top institutions has become more difficult. Universities all around the globe compete for status and ranking, and generally for funding from governmental or private sources. While competition has always been a force in academe, and can help produce excellence, it can also contribute to a decline in a sense of academic community, mission and traditional values (Altbach, P. & Reisberg, L. & Rumbley, L., 2009)⁸.

Globalization, a key reality in the 21st century, has profoundly influenced higher education. The internationalization of higher education requires a significant shift in the operation of higher education systems, as well as of individual higher education institutions. The increased focus on international collaborative ventures, the growing link between internationalization, research and employability necessitate the rethinking of the roles and responsibilities of higher education institutions within national borders and beyond (Guri-Rosenblit, S., 2015)⁹.

Education and research are no longer a monopoly of the English speaking people or developed countries like Japan or western world or North American people. The high participation in the field of higher education has either been achieved or is emerging, in every nation of the world (Sharma, Swarnima, 2018).

As per the statistics released by MHRD in its publication, Statistics at a Glance-2018 Gross Enrolment Ratio (tertiary) was 24.5% in India, 43.4% in China, 68.3 % in Germany, 80.4% in Russia, 56.5% in UK, 85.8% in USA and 9.9% in Pakistan.¹⁰ In spite of this pace of progress, India's institutions for higher education have not reached the world excellence standards.

⁸Altbach, P. & Reisberg, L. & Rumbley, L. (2009). Trends in Global Higher Education: Tracking an Academic Revolution. https://www.researchgate.net/publication/225084084_Trends_in_Global_Higher_Education_Tracking_an_Academic_Revolution

⁹Guri-Rosenblit, S. (2015). Internationalization of Higher Education: Navigating Between Contrasting Trends. In: Curaj A., Matei L., Pricopie R., Salmi J., Scott P. (eds) The European Higher Education Area. Springer, Cham. https://doi.org/10.1007/978-3-319-20877-0_2

¹⁰ https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/ESAG-2018.pdf

1.1.5 Higher Education in India

Education is a significant tool that aids in the creation of a well-developed and progressive nation. Especially in a developing country like India education is the key to a better standard of living and a prosperous future. It is a basic right of every human. To achieve a strong foundation in education, The Ministry of Education (MoE) was created on September 26, 1985, through the 174th amendment to the Government of India (Allocation of Business) Rules, 1961.¹¹ Currently, the MoE works through two departments:

- Department of School Education & Literacy (Dept. of SE & L)
- Department of Higher Education (Dept. of HE)

While the Department of School Education & Literacy is responsible for development of school education and literacy in the country, the Department of Higher Education takes care of Higher Education systems in the country. The Department of Higher Education is engaged in bringing world class opportunities of higher education and research to the country so that Indian students are not finding lacking when facing an international platform. The Department of Higher Education, is responsible for the overall development of the basic infrastructure of Higher Education sector, both in terms of policy and planning. The Department also looks after expansion of access and qualitative improvement in the Higher Education, by establishing and supporting world class universities, colleges and other institutions.

The Institutions of Higher Education in India have been classified in following 3 broad categories

- University and university level institutions i.e., the institutions which are empowered to award degree under some Act of Parliament or State Legislature.
- Colleges/institutions which are not empowered to provide degree in its own name, and therefore are affiliated/recognised with universities.
- Stand-alone institutions (not affiliated with universities) which are not empowered to provide degree, and therefore run diploma level programmes.

According to All India Survey on Higher Education (AISHE, 2019-20)¹²:

¹¹ <https://www.education.gov.in/en/about-moe>

¹² https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/aishe_eng.pdf

- There are 1043 universities, 42343 colleges and 11779 stand-alone institutions in India.
- Among 1043 universities, 408 universities are privately managed and 420 universities are located in rural area. 17 universities are exclusively for women. There are 307 affiliating universities. In addition to 1 central open university, 14 state open universities and 1 state private open university, there are 110 dual mode universities, which offer education through both regular and distance mode also.
- In 4 Union Territories, namely Andaman and Nicobar Islands, Dadra and Nagar Haveli, Daman and Diu, Ladakh and Lakshadweep, there are no universities.
- There are 307 affiliating universities and they have 42343 colleges.
- Estimated Gross Enrolment Ratio (GER) in higher education in India is 27.1%, which is calculated for 18-23 years of age group. GER for male population at all India level is 26.9% and GER for female population at all India level is 27.3%.
- The highest number of students are enrolled at undergraduate level across India, followed by postgraduate levels.
- The highest number of students are enrolled 10 programmes cover more than 79% of the total students enrolled in higher education in Arts courses followed by Science and Commerce Streams.
- The relatively higher share of male enrolment than female enrolment of students is also seen across the levels of higher education except in post graduate courses, certificate courses, and M.Phil.

1.1.6 Quality of Higher Education in India

India's higher education system is the third largest in the world, next to the United States and China. Although during the last decade education sector has been given priority during the national planning and a number of new national education programs and reforms have been initiated by both the Central and State Governments, the higher education sector is still underperforming. So while capacity has been greatly enhanced, the quality still lags behind.

The quality of higher education depends upon research work carried in various streams and fields, conducive academic environment at the educational institutions,

knowledgeable and expert faculty, well equipped and modern physical infrastructure at the universities or educational institutions, availability of adequate sports and recreation facilities, and receptive leading to the holistic development of the learner. As the world is becoming one global village, the education system in the country needs to be integrated with the world's best education system which encompasses exchange of knowledge, research projects in collaboration with other countries following the best education system, interactive networking, sharing of knowledge through international conferences, etc. but in tune with cultural values of the country.

Over the past ten years, there has been a growing awareness across the world in quality control and quality assurance in higher education. Quality in higher education is a key priority for India (NAAC, 2006)¹³. The concept has got attention in Indian Parliament. In the 172nd report of Parliamentary Standing Committee the committee recommended that the quality of higher education should have been accorded due importance in the country. It further mentioned that quality and excellence are the watch-words in today's liberalized environment.¹⁴

Various studies have shown that the nature of instruction and learning being delivered by institutions of higher education in India, is not up to the mark. The rapid expansion of higher education since the mid-1990s, has put a strain on the meagre reserves of the institutions, and has led to a number of problems, like a fall in educational spending per student, a decline in the overall teaching conditions, and an absence of consistency in the quality of education being disseminated across the universities. Higher education in India needs to shift its priority from the expansion of quantity to the enhancement of quality (Sharma, Swarnima, 2018).

In recent times, learners in higher education are bored, unmotivated, disengaged and uninvolved from the academic and social aspects of academic life. Motivation and Learner Engagement has thus become a significant consideration for educators both as a means of understanding student behaviour and performance and for addressing student needs.

¹³ <http://naac.gov.in/docs/Annual%20Reports/Annual%20Report%202006-07.pdf>

¹⁴ <http://164.100.47.5/newcommittee/reports/EnglishCommittees/Committee%20on%20HRD/172ndreport.htm>

1.2 Conceptual Framework

The learner must show active engagement and interest in their respective classes, for them to achieve effective learning. Learners who have high Motivation and interest in the class also achieve effective learning. So, there is need to identify learners' Motivation Levels, and accordingly activities must be planned to promote their active engagement in the teaching-learning processes. Motivation Levels and Learner Engagement Levels are related to one another (Nayir, 2017)¹⁵.

1.2.1 Role of Motivation in Learners

The term Motivation is derived from the Latin word *movere*, meaning “to move.”

Motivation as an internal property of individuals guides or directs one's activity in the world. Motivation as an external force when induced one, helps to incite or shift a change in thinking or behaviour. This perception that one possesses an inner force is the one that drives individuals' goals, actions and even unconscious desires. (Hand & Penuel, 2018)¹⁶.

Motivation is “an internal state that instigates, directs, and maintains behaviour (McInerney & McInerney, 2006)¹⁷. Motivation is the process where goal directed activity is instigated and sustained” (Pintrich, 2000)¹⁸.

According to Deci and Ryan (2000)¹⁹ every individual has different levels of Motivation according to his need:

- **Intrinsic Motivation** - Intrinsic motivation refers to the doing of an activity for its inherent satisfactions rather than for some separable consequence. When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. In humans, intrinsic motivation is not the only form of motivation, or even of volitional activity, but it is a pervasive and important one. It plays an important role in cognitive, social,

¹⁵ Nayir, F. (2017). The Relationship between Student Motivation and Class Engagement Levels. *Eurasian Journal of Educational Research*. 17. 59-78. 10.14689/ejer.2017.71.4.

https://www.researchgate.net/publication/320547509_The_Relationship_between_Student_Motivation_and_Class_Engagement_Levels/citation/download

¹⁶ Hand, V.; Penuel, W. (2018). Engagement vs Motivation: Creating and Sustaining Learning in STEM. Development, School of Education https://www.colorado.edu/academicfutures/sites/default/files/attached-files/hand_penuel.pdf

¹⁷McInerney, D. M., & McInerney, V. (2006). *Educational psychology: constructing learning* (4th ed.). N.S.W, Australia: Pearson Education.

¹⁸ Pintrich, P. R. (2000). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Contemporary Educational Psychology*, 25, 92–104.

¹⁹ Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67. <http://dx.doi.org/10.1006/ceps.1999.1020>

and physical development. Intrinsic motivation can also be said to exist in the relation between individuals and activities. People are intrinsically motivated for some activities and not others, and not everyone is intrinsically motivated for any particular task. Intrinsic motivation, however, is typically a more effective long-term method for achieving goals and completing tasks in a way that makes one feel fulfilled.

- **Extrinsic Motivation** - Extrinsic Motivation refers to completing a task or exhibiting a behaviour because of outside causes such as avoiding punishment or receiving a reward. These rewards can be tangible, such as money or grades, or intangible, such as praise or fame. External rewards can be a useful and effective tool for getting people to stay motivated and on task. This can be particularly important when people need to complete something that they find difficult or uninteresting. While offering rewards can increase Motivation in some cases, researchers have also found that this is not always the case. In fact, offering excessive rewards can actually lead to a decrease in Intrinsic Motivation. The tendency of Extrinsic Motivation to interfere with Intrinsic Motivation is known as over justification effect. This involves a decrease in intrinsically motivated behaviours after the behaviour is extrinsically rewarded and the reinforcement is subsequently discontinued.²⁰ Thus External Motivation is only for a short time and it eventually leads to lose of effectiveness.
- **Lack of motivation or amotivation** - Lack of Motivation refers to the state of lacking an intention to act. It is a condition in which no meaning is attributed to actions. When amotivated, a person's behaviour lacks intentionality and a sense of personal causation. Amotivation can be resulted from not valuing an activity, or not feeling competent to do it, or not believing it will yield a desired outcome.

Theories on Motivation

Psychologists have proposed different theories of Motivation, including drive theory, instinct theory, and humanistic theory (such as Maslow's hierarchy of needs). The reality is, that there are many different forces that guide and direct learner Motivation.

²⁰ <https://www.verywellmind.com/what-is-extrinsic-motivation-2795164>

1) Self-Determination Theory (SDT)

The Self-Determination Theory is based on the study of the interaction between Intrinsic and Extrinsic Motivation given by Deci & Ryan (2000). Motivation is the determinant of individuals' behaviours. According to the Self-Determination Theory, the learner feels the need to be autonomous, competent, and related. The Extrinsic Motivation refers to one's Engagement in an activity, in order to obtain a result which is separable from the activity itself. The Intrinsic Motivation refers to the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn.

The intrinsically motivated behaviour is considered the most autonomous type of motivation because people spontaneously and freely follow their interests while being intrinsically motivated (Deci & Ryan, 2000).

The Self-Determination Theory also makes a qualitative distinction between intrinsic values, such as contributing to the community, affiliating to others, and self-development, and extrinsic values, such as accumulating wealth, acquiring fame and achieving power (Kasser & Ryan, 1996)²¹.

Self-Determination Model, Scale, and Continuum

Different goals, desires, and ideas inform us about wants and needs. Thus, it is useful to think of motivation on a continuum ranging from “non-self-determined to self-determine.”

- Purely self-determined behaviours tend to be intrinsically driven and are done for enjoyment, interest, and inherent satisfaction for the action itself.
- On the other end of the continuum are non-self-determined behaviours, which are performed only because they *must* be done. On this extreme end of the scale, there is a complete lack of control.

In most cases, behaviours tend to lie somewhere in the middle of the continuum.

²¹ Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 280–287.

Figure 1.2 The Self-Determination Continuum

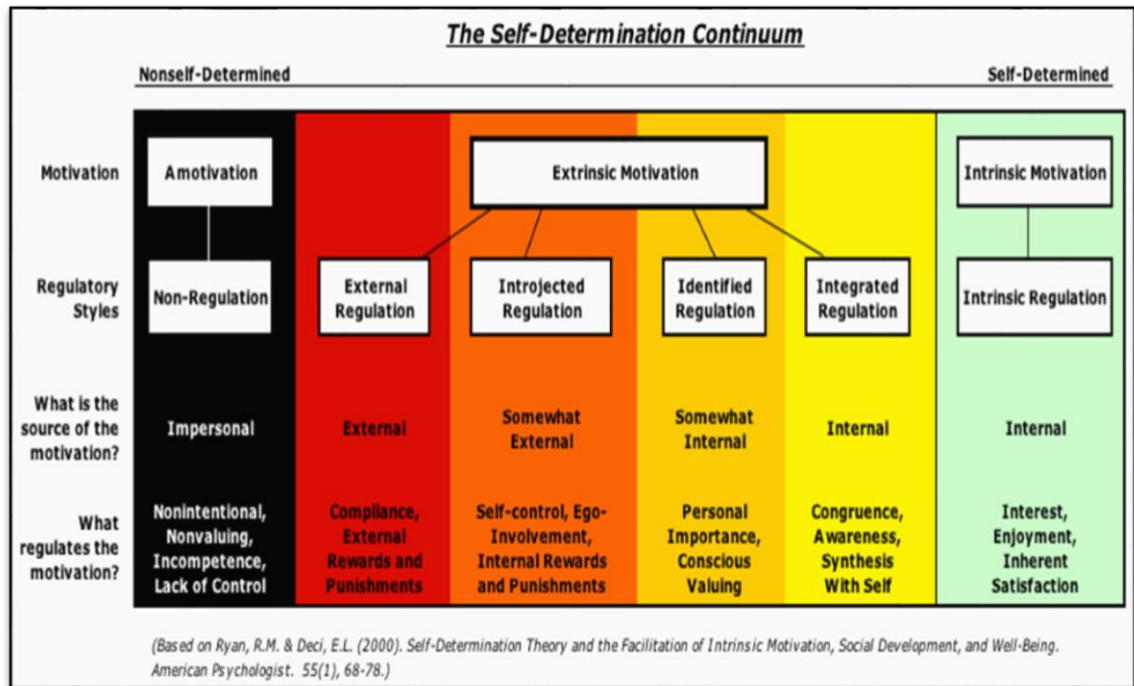


Image Courtesy: <https://positivepsychology.com/self-determination-theory/>

- At the left end of the spectrum, there is **amotivation**, in which an individual is completely non-autonomous, has no drive to speak of, and is struggling to have any of his or her needs met.
- In the middle, there are several levels of extrinsic motivation.
- One step to the right of amotivation is **external regulation**, in which motivation is exclusively external and regulated by compliance, conformity, and external rewards and punishments.
- The next level of extrinsic motivation is termed **introjected regulation**, in which the motivation is somewhat external and is driven by self-control, efforts to protect the ego, and internal rewards and punishments.
- In **identified regulation**, the motivation is somewhat internal and based on conscious values, and that which is personally important to the individual.
- The final step of extrinsic motivation is **integrated regulation**, in which intrinsic sources and the desire to be self-aware are guiding an individual's behaviour.
- The right end of the continuum shows an individual entirely motivated by intrinsic sources. In **intrinsic regulation**, the individual is self-motivated and

self-determined, and driven by interest, enjoyment, and the satisfaction inherent in the behaviour or activity he or she is engaging in.

Although self-determination is generally the goal for individuals, however an individual can be motivated by external sources. Both Intrinsic and Extrinsic Motivation are highly influential determinants of an individual's behaviour, and both drive to meet the three basic needs identified by the SDT model:

- **Autonomy:** People have a need to feel that they are the masters of their own destiny, and that they have at least some control over their lives; most importantly, people have a need to feel that they are in control of their own behaviour.
- **Competence:** There is another need that concerns with achievements, knowledge, and skills. People have a need to build their competence and develop mastery over tasks that are important to them.
- **Relatedness (also called Connection):** People need to have a sense of belonging and connectedness with others; each of us needs other people to some degree

(Deci & Ryan, 2008)²²

SDT presents two sub-theories for a more nuanced understanding of intrinsic and extrinsic motivation. These sub-theories are **Cognitive Evaluation Theory** (CET) and **Organismic Integration Theory** (OIT), which help explain Intrinsic Motivation with regards to its social factors and the various degrees of contextual factors that influence Extrinsic Motivation (Deci & Ryan, 2000).

2) Self-Theories

Carol Dweck has developed a highly influential theory of student motivation building on the work of others, notably on 'attribution theory' – what learners attribute for their failures and successes (Dweck, 1999)²³.

Learners show two distinct reactions to failure, called the helpless and mastery-oriented patterns. Learners with mastery goal orientation are individuals who are aware of their

²²Deci & Ryan (2008). Facilitating Optimal Motivation and Psychological Well Being Across Life's Domains Canadian Psychology 2008, Vol. 49, No. 1, 14 –23 0708-5591/08/\$12.00 DOI: 10.1037/0708-5591.49.1.14 https://selfdeterminationtheory.org/SDT/documents/2008_DeciRyan_CanPsy_Eng.pdf

²³Dweck, C. S. (1999) *Self Theories: Their Role in Motivation, Personality, and Development*. Hove: Psychology Press, Taylor and Francis Group. <https://canvas.harvard.edu/courses/5173/files/1219655/download?verifier=RFvAONClmmYbFIcJpDcZgs3Fuu5qk3i9rhlhg6gc>

competences, focused on self-development, and willing to attain new knowledge and skills. Those with performance-approach orientation are individuals who compare themselves to others and want to show themselves more intelligent and successful than others (Elliot & Dweck, 1998)²⁴.

Those with performance-avoidance goal orientation are individuals who try to hide their failures, are afraid of making mistakes, and have low self-expectations (Elliot & McGregor, 2001)²⁵.

There are researches that suggest that there is a significant positive relationship between mastery goal orientation and Intrinsic Motivation (Chan, Wong & Lo, 2012²⁶; Pintrich & Schunk, 1996²⁷) and between performance-avoidance goal orientation and extrinsic motivation (Özkal, 2013)²⁸. Performance-approach goal orientation, on the other hand, is related to both intrinsic and extrinsic motivation (Elliot & Murayama, 2008)²⁹. Accordingly, learners with Intrinsic Motivation tend to demonstrate authentic Engagement, and those with Extrinsic Motivation tend to demonstrate ritual Engagement (Nayir, 2017).

Most educators believe Motivation is necessary for effective learning in learners. One of the most common perspective in research on Motivation is to identify learners' qualities that are conducive to their Engagement with learning. Thus, it becomes pertinent to focus on Motivation Levels along with their Learner Engagement Levels that can provide insight to the learning achievements.

1.2.2 Role of Engagement in Learners

Learners engaged in learning were found to be more successful academically, as well as less likely to drop out of school. They were found to be intrinsically motivated to

²⁴Elliot, A.J. & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5 – 12.

²⁵Elliot, A.J. & McGregor, H.A. (2001). A 2x2 achievement goal framework. *Journal of Personality and Social Psychology*, 80(3), 501 – 509.

http://selfdeterminationtheory.org/SDT/documents/2001_ElliotMcGregor.pdf

²⁶Chan, K. V., Wong, K. Y. A., & Lo, E.S.C. (2012) Relational analysis of intrinsic motivation, achievement goals, learning strategies and academic achievement for Hong Kong secondary students. *The Asia-Pacific Education Researcher*, 21(2), 230-243.

²⁷Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in education: Theory, research, and applications*. Englewood, NJ: Prentice Hall Merrill.

²⁸Ozkal, N. (2013). Prediction of Intrinsic and Extrinsic Motives for Social Studies According to Self-Efficacy and Achievement Orientations. *Mehmet Akif Ersoy University Journal of the Faculty of Education*, 1 (27), 98-117. Retrieved from <https://dergipark.org.tr/en/pub/maeuefd/issue/19400/206199>

²⁹Elliot, A.J & Murayama, K. (2008). On the Measurement of Achievement Goals: Critique, Illustration, and Application. *Journal of Educational Psychology*, 100, 613–628.

invest in learning, attend classes, and participate in study activities (Bakker, A. B., Vergel, A. I. S., & Kuntze, J., 2015)³⁰.

The word ‘Engagement’ is commonly used to denote such meanings as commitment, agency, and reciprocity, which makes the concept largely synonymous with the personally involving participation in some activity

Engagement is a quality of user experiences with technology that is characterized by challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest, and affect (O’Brien & Toms, 2008)³¹.

Learner Engagement, defined as the involvement of the learner’s cognitive and emotional energy to accomplish a learning task (Astin, 1984)³².

Learner Engagement is a complex phenomenon. It involves both physical and psychological constructs. It is demarcated as the amount of energy learners physically and psychologically expend whereby they stay attentive, involved, and motivated to learn.

Not all states of Learner Engagement are associated with positive learner outcomes. It is important to distinguish between learners’ positive and negative states of Engagement (Skinner, 2016)³³. Learners’ Positive Engagement include paying attention, asking questions, supplementing the teacher without any prompt, or taking initiative (Wang & Fredricks, 2014)³⁴. In contrast, Negative Engagement include being distracted, expressing boredom, disobeying rules, or complaining which can seriously jeopardise the learners’ success (Skinner, 1990)³⁵.

³⁰Bakker, A. B., Vergel, A. I. S., & Kuntze, J. (2015). Student engagement and performance: A weekly diary study on the role of openness. *Motivation and Emotion*, 39, 49-62.

³¹ O’Brien, H. L and Toms, E. G. (2008). What is user engagement? A conceptual framework for defining user engagement with technology. *Journal of the American Society for Information Science and Technology* 59, 6 (2008), 938–955. DOI: <http://dx.doi.org/10.1002/asi.20801>

³² Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 40(5), 518–529. Retrieved from <https://www.middlesex.mass.edu/tutoringservices/downloads/astininv.pdf>

³³ Skinner, E. A. (2016). Engagement and disaffection as central to processes of motivational resilience and development. In K. R. Wentzel, & D. B. Miele (Eds.), *Handbook of motivation at school* (Abingdon, England: Routledge), Retrieved 11 April 2019 from Routledge Handbooks Online: <https://www.routledgehandbooks.com/doi/10.4324/9781315773384.ch8>.

³⁴ Wang, M., & Fredricks, J. (2014). The reciprocal links between school engagement, youth problem behaviours, and school dropout during adolescence. *Child Development*, 85(2), 722–737.

³⁵ Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I’ve got it: The role of perceived control in children’s engagement and school achievement. *Journal of Educational Psychology*, 82(1), 22–32.

Learner Engagement has three dimensions, which are emotional, behavioural, and cognitive (Fredricks, Blumenfeld, & Paris, 2004)³⁶.

- **Behavioural Engagement** – Behavioural Engagement is often defined as an engagement based on one's involvement into the academic, social, and extracurricular processes of school (Fredricks, *et al.*, 2004). Learners' behaviours related with learning, such as concentrating, exerting effort, taking initiative, being persistent in the face of failure, following rules and positively interacting with teachers and peers among others, greater academic achievement constitute as Behavioural Engagement (Hattie & Anderman, 2013)³⁷. Behavioural Engagement can be increased by changing the aspects of the learning environment (DeVito, 2016)³⁸.
- **Cognitive Engagement** - Cognitive Engagement is defined as an aspect of engagement, which is based on learner investment in school and the processes of learning (Fredricks *et al.*, 2004). A cognitively engaged learner is thoughtful, strategic, and willing to exert the necessary effort for comprehension of complex ideas or mastery of difficult skills (Christenson, Reschly, & Wylie, 2012)³⁹.
- **Emotional Engagement** – Emotional Engagement is defined as an engagement based on how learners identify with their school (Fredricks *et al.*, 2004). It is related to the identification with the school that included belonging, valuing, or a feeling of being important to the school, as well as appreciation of success in school-related outcomes (Christenson *et al.*, 2012).
- **Academic Engagement** - A four-part model has also been proposed by Christenson *et al.* (2012). They have added an academic component as a fourth dimension which includes time on task, credits earned, and homework completion. Academic Engagement refers to behaviours related directly to the learning processes, attentiveness and completing assignments etc. in class and

³⁶Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>

³⁷Hattie, J., & Anderman, E. M. (2013). *International guide to student achievement*. New York: Routledge. https://faculty.edfac.usyd.edu.au/projects/FIT/articles/Watt&Richardson_Hattie&Andermoon2013.pdf

³⁸ DeVito, M. (2016). *Factors Influencing Student Engagement*. Unpublished Certificate of Advanced Study Thesis, Sacred Heart University, Fairfield, CT. Retrieved from <http://digitalcommons.sacredheart.edu/edl/11>

³⁹Christenson, & L., Sandra & Reschly, & L., Amy & WYLIE, & CATHY, & Wideasani, Azkananda. (2012). *Handbook of Student Engagement*. Publisher: Azkananda Wideasani, Editor: Christenson, Sandra L., Reschly, Amy L., WYLIE, CATHY, ISBN: 978-1-4614-6791-5

https://www.researchgate.net/profile/Azkananda-Wideasani/publication/310773130_Handbook_of_Student_Engagement/links/5836a0dd08aed45931c772b7/Handbook-of-Student-Engagement.pdf

at home, or augmenting learning through academic extracurricular activities. Certain minimal “threshold” levels of Academic Engagement are essential for learning to occur.

However, for the research purpose, the fourth dimension types of variables are better aligned with school Engagement than to Learner Engagement. Thus, the current research work fits better conceptually under the three-component model, as described by Fredricks *et al.* (2004)

Table 1.1 - Dimensions of Learner Engagement

Dimensions	Exemplified in the following elements	References
Behavioural	➤ Participation ➤ Presence ➤ On task ➤ Behaviour ➤ Compliance with rules ➤ Effort, persistence, concentration, attention, rates of/quality of contribution ➤ Involvement in school-related activities	Fredricks, Blumenfeld, & Paris (2004) Tyler & Boelter (2008)
Emotional	➤ Positive and negative reactions to teachers, classmates, ➤ Academic activity and school ➤ Student attitude (thoughts, feelings, outlook) ➤ Perception of the value of learning ➤ Interest and enjoyment ➤ Happiness ➤ Identification with school	Fredricks, Blumenfeld, & Paris (2004) Tyler & Boelter (2008), Patrick <i>et al.</i>(2007), Johnson (2008), Hulleman <i>et al.</i> (2008), Walker & Greene (2009), Wentzel <i>et al.</i> (2004), Libbey (2004), Shin <i>et al.</i> (2007), Martin & Dowson (2009), Tsai <i>et al.</i> (2008),

	➤ Sense of belonging within a school	Shernoff & Schmidt (2008), Gottfried <i>et al.</i> (2001)
Cognitive	➤ Volition learning (learning by choice) ➤ Investment and willingness to exert effort ➤ Thoughtfulness (applying the processes of deep thinking) ➤ Self-regulation ➤ Goal setting ➤ Use of meta-cognitive strategies ➤ Preference for challenge ➤ Resiliency and persistence ➤ Mastery orientation ➤ A sense of agency	Fredricks, Blumenfeld & Paris (2004), Tyler & Boelter (2008), Walker & Greene (2009), Bandura <i>et al.</i> (1996), Bacchini & Magliulo (2003), Martin & Dowson (2009), Zimmerman & Cleary (2006), Dembo & Eaton (2000), Nota <i>et al.</i> (2004), Schunk (2008), Caprara <i>et al.</i> (2008), Joseph (2006), Dinsmore <i>et al.</i> (2008), Long <i>et al.</i> (2007), Bong (2004), Anderson <i>et al.</i> (2005), Gottfried <i>et al.</i> (2001), Joselowsky (2007)

Reference: (Gibbs and Poskitt, 2010)⁴⁰

Theories on Learner Engagement

Research on Learner Engagement has grown out of a variety of different theoretical traditions. Some researchers have made use of Motivational theories such as self-determination, self-regulation, flow, goal theory, and expectancy-value to examine links between contextual factors, patterns of Learner Engagement, and adjustment. Many researchers have also used school identification, school connection, and life course theories to explain the role of Learner Engagement in the process of dropout and school completion (Fredricks, 2019)⁴¹.

⁴⁰ Gibbs, R. & Poskitt, J. (2010). Student engagement in the middle years of schooling (years 7-10): A literature review, New Zealand, Ministry of Education. Retrieved from www.educationcounts.govt.nz/publications.

⁴¹ Fredricks, J. A. (2019). Student Engagement, Context, and Adjustment: Addressing Definitional, Measurement, and Methodological Issues https://pdf.sciencedirectassets.com/271828/1-s2.0-S0959475216X00035/1-s2.0-S0959475216300159/Jennifer_Fredricks_Student_Engagement_2016.pdf?

1) Student Involvement Theory

The origin modern Engagement research is thought to have originated with Alexander Astin's "Student Involvement Theory" (Astin, 1984). The theory states the following:

- Involvement basically refers to the learner's investment of physical and psychological energy in various objects. The objects may range from being highly generalized (the student experience), or highly specific (preparing for a chemistry examination).
- Irrespective of its object, involvement occurs along a continuum. Different learners manifest different degrees of involvement in a given object, and the same learner manifests different degrees of involvement in different objects at different times.
- Learner's involvement includes both quantitative and qualitative aspects. The extent of a learner's involvement in academic work, can be measured quantitatively (e.g.: how many hours the student spends studying), and qualitatively (e.g.: whether the student reviews and comprehends reading assignments, or simply stares at the textbook and daydreams).
- The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.
- The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement.

The last two propositions are the key educational postulates, because they provide clues for designing more effective educational programs for learners.

2) The Engagement Theory

It is a framework for technology-based teaching and learning (Kearsley & Schneiderman, 1999)⁴². Its fundamental underlying idea is that learners must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks. While in principle, such Engagement could occur without the use of technology, Kearsley and Schneiderman (1999) believe that technology can facilitate Engagement in ways which are difficult to achieve otherwise. Learner Engagement

⁴² Kearsley, G. & Schneiderman, B. (1999). Engagement theory: A framework for technology-based learning and teaching. Originally at <http://home.sprynet.com/~gkearsley/engage.htm>. Retrieved 14:42, 11 September 2006 (MEST) from google cache Retrieved theory from: http://edutechwiki.unige.ch/en/Engagement_theory

should be self-directed, meaningful involvement with materials, or applications based on cognitive challenge and motivation (O'Brien & Toms, 2008).

Engagement theory is based upon the idea of creating successful collaborative teams that work on ambitious meaningful projects, even outside the classroom. Learning activities includes collaborative team work, project-based learning, and outside (authentic) focus. These are summarized under three components, Relate-Create-Donate (Kearsley & Schneiderman, 1999):

- Relate emphasizes team work (communication, management, planning, social skills)
- Create emphasizes creativity and purpose. Learners have to define (or at least identify in terms of a problem domain) and execute a project in context
- Donate stresses usefulness of the outcome (ideally each project has an outside "customer" that the project is being conducted for).

1.2.3 Relationship between Motivation and Learner Engagement

Motivation level is related to class Engagement (Nayir, 2017). According to Ryan and Deci (2008), Learner Engagement Level is related to Learner Motivation because Motivation is an important prerequisite of Learner Engagement in the learning process.

Learner Engagement recognizes the complexity of engagement beyond the domains of cognition, behaviour, emotion or affect. There is positive relationship between learners with Mastery Goal Orientation and Authentic Engagement and a negative relationship between Authentic Engagement and Rebellion Engagement, Ritual Engagement. In other words, while learners with Intrinsic Motivation show Authentic Engagement. Ritual Engagement and Rebellion Engagement appear as Intrinsic Motivation decreases (Nayir, 2017).

The research suggest that learners with Extrinsic Motivation exhibit Ritual Engagement (Saeed & Zyngier, 2012)⁴³, and that learners with Intrinsic Motivation exhibit Authentic Learner Engagement (Ryan & Deci, 2008). Increasing Motivation is related

⁴³ Saeed, S. & Zyngier, D. (2012). How motivation influences student engagement: A qualitative case study. *Journal of Education and Learning*, 1(2), 252 – 267.
<https://files.eric.ed.gov/fulltext/EJ1081372.pdf>

to Learner Engagement with practice learning in behavioural, emotional, and agentic dimensions (Wang, Qiao, & Chui, 2017)⁴⁴.

Both Motivation and Learner Engagement have been conceptualized as a personal trait and context varying psychological state (Fredricks *et al.*, 2004; Schunk, Pintrich, & Meece, 2008⁴⁵).

1.3 Rationale of the Study

For higher education learners to perform well academically, there is a need for them to be engaged and intrinsically or self-motivated (Govender, 2012)⁴⁶. Learner Engagement and interest in class are important conditions for active learning and Motivation level is related to class Engagement (Nayir, 2017).

Learners who are engaged, are also motivated, willing to learn new things and feel they can succeed. In absence of these dispositions, they will be unable to translate their raw potential into high-level skills, no matter how intelligent and gifted they are, no matter how much effort and professionalism teachers put into their jobs, and no matter how many resources countries devote to education. As per the National Knowledge Commissions Report (Pitroda, 2006)⁴⁷, there is a quiet crisis in higher education in India that runs deep. There are many situations where learners do not feel motivated nor engaged. If the reasons behind these issues are not identified or addressed, it will lead to negative repercussions like disruptive behaviour, poor attendance at and negative dispositions towards the learning institutions at the end associated with low academic performance and are related to such negative outcomes as low levels of emotional well-being, dropouts, delinquency and drug abuse.

The assumption that motivation could be predictor of student engagement and vice versa, is needed to be explored in the Indian context. During the COVID-19 pandemic conditions, the entire education system had witnessed massive changes. The change in scenario can result into change in Motivation Levels and Learner Engagement Levels

⁴⁴ Wang, Y., Qiao, D. & Chui, E. (2017). Student Engagement Matters: A Self-Determination Perspective on Chinese MSW Students' Perceived Competence after Practice Learning, *British Journal of Social Work*,

⁴⁵ Schunk, D. H., Pintrich, P. R., & Meece, J. L. (Eds.). (2008). *Motivation in education: Theory, research, and applications* (3rd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

⁴⁶ Govender, C.M. (2012). Motivation of higher education students: a single student engagement case study. *The Journal of Teaching and Learning*, 7, 14-23

⁴⁷ Pitroda, S. (2006). "The Knowledge Commission Report"

<https://static1.squarespace.com/static/5356af05e4b095ff0fea9e11/t/539504b4e4b0d85a0d78c51e/1402274996341/NKCReport09+copy.pdf>

which are two important pillars to carry out learning. Impacts due to the changed conditions on motivation levels and engagement levels on Indian learners is required to be sought out especially in the higher education sector. Thus, the present research study aims to establish a positive correlation between Motivation and Learner Engagement among the higher education learners. Learners, irrespective of their gender, age, type of degree, stream, mode of education, will show a positive Learner Engagement, when their Motivation Levels are high.

1.4 Need of the Study

Motivation is integral to the learning process. It is the underlying force, which compels a student to perform, to continue to learn, and move to the completion of tasks at hand. Intrinsic motivators play a large part in motivating and engaging learners within the classroom (Curtis, 2017)⁴⁸.

The focus of this study is related to Motivation and Learner Engagement in higher education. The approach is to better understand the motivational profiles and learner characteristics of higher education learner. During the impending COVID-19 pandemic, there has been a lot of changes occurring in the education scenario. These changes have caused psychological impacts amongst the learners especially to their motivation levels. There is a need to recognize these psychological changes in learners especially in higher education, where the level of mental stress and strife is maximum. There are not many research studies correlating Motivation and Learner Engagement done in Indian context. Research done on higher education learners, which offers potential support to global, national, and local development of the nation are also underdeveloped. Hence, the researcher wanted to perform a correlational study on Motivation and Learner Engagement for higher education learners. Through this research study, the researcher also attempts to analyse the motivation and learners' engagement toward their course during the changed educational scenario, and thus demonstrate if there is any significant relationship between the Motivation Levels and Engagement Levels on learners in higher education.

Additionally, most of the preliminary exploratory review of related literature is situated in the context of other countries and their education systems. Therefore, a correlational

⁴⁸ Curtis, R. F. (2017). *Increasing engagement and motivation*. [Doctor of Education Research Thesis: Carson-Newman University]. https://classic.cn.edu/libraries/tiny_mce/tiny_mce/plugins/filemanager/files/Dissertations/Dissertations2017/Rebecca_Curtis.pdf

study of the motivation and engagement levels of the higher education under Indian context provides an important research opportunity to the researcher that is worth investigating.

1.5 Statement of the Problem

A Correlational Study between Motivation and Learner Engagement among Higher Education Learners

1.6 Variables of the Present Study

A concept which can take on different quantitative values is called a variable.⁴⁹ A variable refers to a characteristic or attribute of an individual or an organization that can be measured or observed and that varies among the people or organization being studied. In descriptive researches, the researcher involves some type of comparison or contrast and attempts to discover relationships between existing non-manipulated variables.

In the present study the researcher tried to find the correlation between the two variables-Motivation and Learner Engagement among higher education learners.

There are also some moderator variables that were taken into consideration in the present study. A moderator variable is a variable that affects the strength of the relationship between a dependent and independent variable. In correlational research, a moderator is a variable that affects the correlation of two variables.⁵⁰ The moderator variables in this research study are gender, age, type of degree course (UG/PG), different streams, and mode of education (regular/distance).

1.7 Definitions

1.7.1 Conceptual Definitions

- **Correlational study:** Correlation studies are descriptive research concerned with determining the extent of relationship existing between variables. They enable a researcher to ascertain the extent to which variations in one variable are associated with variations in another.⁵¹

⁴⁹ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*. (4th ed.). New Age International (P) Limited Publishers. p 32

⁵⁰<https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/moderator-variable/>

⁵¹ Koul, L. (2021). *Methodology of Educational Research*, (5th ed.). Vikas Publishing House. p.131

- **Motivation:** Motivation is the level of effort an individual is willing to expend toward the achievement of a goal (Pew 2007)⁵². Motivation can be conceptualised as learners' energy and drive to learn, work effectively, and achieve to their potential at school and the behaviours that follow from this energy and drive. Motivation plays a large part in learners' interest in and enjoyment of study. Definition of Motivation was explained using various theories such as conditioning theory, cognitive consistency theory and humanistic theory (Alioon, 2016)⁵³.
- **Learner Engagement-** Engagement is mental effort focused on learning and it is a precondition to learning progress (Kuh, 2009)⁵⁴. Engagement is defined as the cognitively active participation in the learning process (Appleton, Christenson & Furlong, 2008)⁵⁵. Engagement can be measured through both qualitative and quantitative data sources (Appleton *et al.*, 2008). Learner Engagement represents both the time and energy that learners invest in educationally purposeful activities and the effort institutions devote to using effective educational practices (Kuh, Cruce, Shoup & Kinzie, 2008)⁵⁶.
- **Higher Education Learner:** Higher Education is defined as the education, which is obtained after completing 12 years of schooling or equivalent and is of the duration of at least nine months (full time). The education may be of the nature of General, Vocational, Professional or Technical education (AISHE Annexure 2)⁵⁷.

Higher education, also called post-secondary education, third-level or tertiary education, is an optional final stage of formal learning that occurs after completion of secondary education. This consists of Universities, Colleges and

⁵² Pew, S. (2007). Andragogy and pedagogy as foundational theory for student motivation in higher education. *Student Motivation*, 2, 14-25. DOI: 10.46504/02200701pe
https://www.researchgate.net/publication/26495233_Andragogy_and_Pedagogy_as_Foundational_Theory_for_Student_Motivation_in_Higher_Education.

⁵³ Alioon, Y. (2016). *An investigation of student engagement, motivation and attitudes towards course content in a mobile-learning enhanced course* [Ph.D. Thesis: Middle East Technical University]. <https://etd.lib.metu.edu.tr/upload/12620375/index.pdf>

⁵⁴ Kuh, G.D. (2009) What Student Affairs Professionals Need to Know about Student Engagement. *Journal of College Student Development*. 50 (6), pp. 683–706.
 Doi 10.1353/csd.0.0099

<https://muse.jhu.edu/article/364960>

⁵⁵ Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issue of the construct. *Psychology in the Schools*, 45, 369–386. DOI: 10.1002/pits.20303

https://www.researchgate.net/publication/227690344_Student_engagement_with_school_Critical_conceptual_and_methodological_issues_of_the_construct

⁵⁶ Kuh, G. D., Cruce, T. M., Shoup, R., & Kinzie, J. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), 540-563. doi:10.1353/jhe.0.0019

⁵⁷ <https://aishe.gov.in/aishe/getAboutMHRDPages;jsessionid=2574316EDB4131E8E1CA114049F5802C.n1>

Polytechnics that offer formal degrees beyond high school or secondary school education.

Higher education learners are pursuing post-secondary education, third-level or tertiary education.

1.7.2 Operational Definitions

- **Correlational study:** A study aimed to describe and measure the degree of association (or relationship) between the variables Motivation and Learner Engagement.
- **Motivation:** Motivation is defined as the efforts a learner is willing to spend to achieve his/her goals. Motivation was further defined in terms of:
 - **Intrinsic Motivation:** learners engaged in an activity because it is interesting or enjoyable.
 - **Extrinsic Motivation:** learners engaged in an activity because he or she desires the outcome, and wants to achieve some instrumental end, such as earning a reward.
- **Learner Engagement:** Participation of the learners in the learning activities offered as part of the learners' course, and every other aspect of their educational program. It consists of the following parameters:
 - **Behavioural Engagement:** refers to involvement in academic and social activities which result in positive academic outcomes while preventing drop out.
 - **Emotional Engagement:** includes positive and negative reactions of learners to instructors, peers and school which affect their tendency to work.
 - **Cognitive Engagement:** refers to investment and effort which is required for understanding ideas and learns skills.
- **Higher Education Learners:** Higher education learners are those students who are belonging to regular or distance degree education program from Arts, Science, Commerce, Engineering, Management streams.

1.8 Research Questions

- Is there a relationship between Motivation Levels and Learner Engagement Levels in higher education learners?
- What is the level of Motivation in higher education learners?
- What is the level of Learner Engagement in higher education learner?

1.9 Aims

- To study the correlation between Motivation Levels and Learner Engagement Levels among higher education learners.
- To study Motivation Levels in higher education learners.
- To study Learner Engagement Levels in higher education learner.

1.10 Objectives

- 1) To study the correlation between Motivation Levels and Learner Engagement Levels of higher education learners
- 2) To study the correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to:
 - a) Gender
 - b) Age Groups
 - c) Undergraduate and Postgraduate Degree
 - d) Different streams
 - e) Mode of education (Regular and Distance)
- 3) To study the Motivation Levels in higher education learners with respect to:
 - a) Gender
 - b) Age Groups
 - c) Undergraduate and Postgraduate Degree
 - d) Different streams
 - e) Mode of education (Regular and Distance)
- 4) To study the Learner Engagement Levels in higher education learners with respect to:
 - a) Gender
 - b) Age Groups

- c) Undergraduate and Postgraduate Degree
- d) Different streams
- e) Mode of education (Regular and Distance)

1.11 Hypothesis

1. There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners.
2. There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to:
 - a) Gender
 - b) Age Groups
 - c) Undergraduate and Postgraduate Degree
 - d) Different Streams
 - e) Mode of Education (Regular and Distance)
3. There is no significant difference in the Motivation Levels in higher education learners with respect to
 - a) Gender
 - b) Age Groups
 - c) Undergraduate and Postgraduate Degree
 - d) Different Streams
 - e) Mode of Education (Regular and Distance)
4. There is no significant difference in the Learner Engagement Levels in higher education learners.
 - a) Gender
 - b) Age Groups
 - c) Undergraduate and Postgraduate Degree
 - d) Different Streams
 - e) Mode of Education (Regular and Distance)

1.12 Scope and Delimitation of the Study

1.12.1 Scope of the Study

The scope details how in-depth is the study. It is to explore the research question and the parameters in which it will operate in relation to the population and timeframe.

This research study has taken into considerations only higher education learners belonging to regular or distance learning from Arts, Science, Commerce, Engineering, Management streams who are actively enrolled in any graduate or post graduate studies, both regular and distance modes of education. The research is carried using a single survey instrument to measure Motivation and Learner Engagement results through online data collection. The correlational design is limited to making only predictions or possible significant relationships.

1.12.2 Delimitation of the Study

The delimitations of a study are the factors and variables that not to be included in the investigation. They are the boundaries the researcher sets in terms of study.

The study was delimited to the sample population located in and around Mumbai.

Learners studying in any Certificate, Diploma, and PG-Diploma courses were excluded from the study.

Since the data collection was done during COVID-19 pandemic and under lock down restrictions, it was done through online mode by using Google Forms.

1.13 Significance

Learners' energy and drive to engage, learn, work effectively, and achieve their potential at school, motivation and engagement play a large role in learners' interest and enjoyment of school. Learner Engagement and interest in class are vital conditions for active learning. For this they must be highly motivated. Highly motivated learners make great efforts to be engaged in class. Thus, the knowledge about learners' Motivation Level is essential for active engagement in class Nayir, (2017). Motivation level is related to class Engagement.

This study can provide insight to the following groups:

- *Teachers:* Teachers play an important role increasing Motivation and extent of Engagement of their learners. A teacher's positive demeanour has been shown to

have a huge impact on Learner Engagement. The mood of the leader absolutely impacts the mood of the organization. When great positive energy from the teacher is felt by learners, the perception of being accepted, supported and emotionally safe increases. This leads directly to a learner's willingness to participate, give more effort and engage in the academic process consistently. Once Motivation and Learner Engagement have become top-of-mind for educators, they can easily recognize the gaps in learners' learning. This research, thus will help the teachers in higher education institutions by generating a serious narrowness of horizon and experience leading to better empathizing with the learners. They will easily be able to identify and reach out to learners' Motivational needs and tap their Engagement Levels.

- *Learners:* They are the most vital stakeholders in the education system. Following factors likely to have a significant impact upon Motivation and Learner Engagement:
 - a) learners' perceptions of, and satisfaction with, their current performance and work rate in school;
 - b) the importance ascribed to effort, as opposed to fixed levels of ability or external factors, in explaining the reasons for task-related success or failure;
 - c) the value placed upon educational achievement, and of being an educated person, as ends in themselves or as a means to achieve other desirable goals;
 - d) peer influences, in particular, the acceptability, or otherwise, of outward shows of high levels of engagement, motivation and striving.

This research study will help the learners to develop an insight about their own Motivational and Engagement needs.

- *Various institutes and organisations engaged in the higher education sector:* The environment of the institution is very important in shaping the personality of the learner. This research study will help them in establishing the relationship between motivation and engagement of the higher education learners, in the contemporary context.
- *Parents:* Parental influence may take many forms, direct and indirect, and include those situations where parents
 - a) actually assist in the undertaking of school-related tasks;
 - b) model appropriate learning behaviours by means of personal example;

- c) act to ensure that school-related tasks are completed appropriately;
- d) demonstrate high expectations and provide support and encouragement for studying hard and persevering when tasks are difficult and unappealing; and
- e) help to ensure that conditions at home are appropriately structured in order to facilitate their ward's learning

This study will help parents to understand their ward's needs and help in better guiding them to the desired path.

- *Policy makers:* This study may further enhance and contribute to the knowledge of the Motivational and Learner Engagement needs, potentially instigating a desired change in approach towards the conduction of the higher education could be planned and chartered.
- *Curriculum Designers and Instructional Designers:* This study will benefit instructors in developing effective strategies in course designing, instructional designing, teaching interventions, and teaching approaches that will have more prominence given to learner Motivation and Learner Engagement.

1.14 Conclusion

Motivation and Learner Engagement are highly related and overlapping concepts, having many commonalities as measurable constructs. However, Motivation has been traditionally viewed as a psychological construct, whereas Learner Engagement, even in its common definition, refers to an emotional involvement or commitment to some object and describes the experiential intensity of a relationship or interaction (Christenson *et al.*, 2012).

Learners display better Motivation and Engagement when they experience learner focused instructions. Motivation and Learner Engagement play an important role in learning and behaviour of students. Hence finding the relation between Motivation and Learner Engagement is essential. Higher education learners are future of any nation. Thus, considering all the aspects the current study attempts to find the relationship between Motivation and Learners Engagement in higher education learners.

CHAPTER 2

REVIEW OF LITERATURE

Review of Literature is one of the most important steps in the process of research. It helps to establish about what is already known about a particular phenomenon. A literature review establishes familiarity with and understanding of current research in a particular field before carrying out a new investigation. The main purpose of conducting a literature review is to provide acquaintance about the work that already done and the knowledge and ideas that have already been established on particular topic of research. A literature review can also be termed as a survey of scholarly sources on a specific topic that provides an overview of current knowledge, allowing the researcher to identify relevant theories, methods, and gaps in the existing research.

A good literature review enables the researcher to find out what research has already been done and identify what is unknown within your topic

A literature review has four main objectives:

- It surveys the literature in your chosen area of study
- It synthesises the information in that literature into a summary
- It critically analyses the information gathered by identifying gaps in current knowledge; by showing limitations of theories and points of view; and by formulating areas for further research and reviewing areas of controversy
- It presents the literature in an organised way

According to Creswell (2011), review of literature is the written summary of journal articles, books and other documents that describes the past and current state of knowledge/information on the topic of your research study.

According to Hart (1998)⁵⁸ defined the literature review as “the use of ideas in the literature to justify the particular approach to the topic, the selection of methods, and demonstration that this research contributes something new”. He also noted that for the literature review, “quality means appropriate breadth and depth, rigor and consistency, clarity and brevity, and effective analysis and synthesis”.

According to Webster and Watson (2002)⁵⁹ defined an effective literature review as

⁵⁸ Hart, C. (1999). *Doing a literature review. Releasing the social science imagination*. London: Sage Publications

⁵⁹ Webster, J., & Watson, R. T. (2002). Analysing the past to prepare for the future: Writing a literature re-view. *MIS Quarterly*, 26(2), 13-23.

one that “creates a firm foundation for advancing knowledge. It facilitates theory development, closes areas where a plethora of research exists, and uncovers areas where research is needed”.

Both Motivation and Learner Engagement have been extensively researched over the past few years, there have been a variety of findings. The current study is a modest study to explore the correlation between Motivation and Learner Engagement amongst learners from higher education during the current pandemic situation.

The review of literature is focused on establishing a relationship between Motivation and Learner Engagement. The literature review also presented the role of the Motivation and Learner Engagement.

In the present study, the review of literature is carried on in the following way:

2.1 Studies from Abroad

2.1.1 Literature on Motivation

- 1) **Howard, J.L., Bureau, J.S., Guay, F., Chong, J.X.Y., Ryan, R. M. (2021)⁶⁰** in the research study “**Student Motivation and Associated Outcomes: A Meta-Analysis from Self-Determination Theory**” had examined the current meta-analysis of different types of motivation in 344 samples (223,209 participants) as they are related to 26 performance, well-being, goal orientation, and persistence-related student outcomes. The research findings highlight that intrinsic motivation is related to student success and well-being, whereas personal value (identified regulation) is particularly highly related to persistence. Ego-involved motives (introjected regulation) were positively related to persistence and performance goals, but also positively related with indicators of ill-being. Motivation driven by a desire to obtain rewards or avoid punishment (external regulation) was not associated to performance or persistence but was associated with decreased well-being. Finally, amotivation was related to poor outcomes. Relative weights analysis further estimates the degree to which motivation types uniquely predict outcomes, highlighting that identified regulation and intrinsic motivation are likely key factors for school adjustment.

⁶⁰Howard, J.L., Bureau, J.S., Guay, F., Chong, J.X.Y., Ryan, R. M. (2021). Student motivation and associated outcomes: A meta-analysis from self-determination theory. Perspectives on Psychological Science. <https://doi.org/10.1177/1745691620966789>
https://selfdeterminationtheory.org/wp-content/uploads/2021/02/2021_HowardBureauGuayChongRyan_Student-Motivation_PrePrint.pdf

- 2) **Wang, C.K. John *et al.* (2019)⁶¹** in the research study “**Competence, autonomy, and relatedness in the classroom: understanding students’ motivational processes using the self-determination theory**”, had three psychological needs. For the research study, the sample consisted of 1549 students from 10 secondary schools in Singapore. Structural equation modelling (SEM) analysis showed that students’ psychological needs are positively related to autonomous motivation, and this in turn, lead to higher enjoyment, value and lower pressure. It was also seen that the three psychological needs were negatively related to controlled motivation. Controlled motivation was positively related to pressure but negatively related to enjoyment and value. In terms of the differential effects of the three psychological needs, relatedness contributed strongly to autonomous motivation, compared to autonomy and competence. In contrast, while autonomy and relatedness contributed to controlled motivation negatively, competence positively predicted controlled motivation. Finally, competence was found to link to pressure in a negative way. In summary, the findings of the current study provide support to the propositions of SDT and add some insight to the differential effects of the three psychological needs examined the relationships between need satisfaction, motivation, and outcomes as well as the differential effects of the
- 3) **Özlem Keskin; Abdulmenaf Korkutata (2018)⁶²** in the research study “**Reviewing Academic Motivation Levels of Students Study in Different Faculties in Terms of Certain Variables (Sakarya University Case)**” conducted to specify the differences between motivation levels of students in terms of age, gender, class and department variables. ‘Academic Motivation Scale’ that is seven points Likert scale was developed by Karagüven (2012) was used as the data collection tool in this research that was performed by screening model. Descriptive analyses were applied in data “t-test” was applied in independent groups to determine whether there were differences based on gender and age ranges. One Way ANOVA Test was conducted to specify the differences based on classes and

⁶¹ Wang, *et al* (2019). Competence, autonomy, and relatedness in the classroom: understanding students’ motivational processes using the self-determination theory, *Heliyon*, Volume 5, Issue 7, 2019, e01983, ISSN 2405-8440, <https://doi.org/10.1016/j.heliyon.2019.e01983> (<https://www.sciencedirect.com/science/article/pii/S240584401935604X>)

⁶² Özlem K., Abdulmenaf K. (2018). Reviewing Academic Motivation Levels of Students Study in Different Faculties in Terms of Certain Variables (Sakarya University Case). *Journal of Education and e-Learning Research*, 5(3): 207-215. <https://files.eric.ed.gov/fulltext/EJ1197468.pdf>

departments. The research findings reported statistically significant differences ($p < 0.01$) between academic motivation sub-dimensions were evaluated based on age range, gender, classes and departments.

- 4) **Alkaabi, S. A. R., Alkaabi, W., & Vyver, G. (2017)⁶³** did a conceptual study **“Researching Student Motivation”**, where they presented a unifying framework for approaching motivation research in education. The motivation theories are rich in content but are complex in motivation research. Due to these complexities, many researchers focus on using a single motivation theory in their studies. Using multiple motivation theories in a singular study is not a common practice in education research. This would provide an opportunity to use multiple motivation theories in educational research, and other disciplines.
- 5) **Yilmaz, Ercan *et al.* (2017)⁶⁴** in the research study **“Variables Affecting Student Motivation Based on Academic Publications”**, had analysed the variables having impact on the student motivation based on the articles, conference papers, master's theses and doctoral dissertations published in the years 2000-2017. A total of 165 research papers were selected for the research material. The data were collected through qualitative research techniques through document review and content analysis. According to the research results, the most important factors affecting student motivation are the fields of teacher, teachers' classroom management skills and their teaching methods. In this research, factors having less influence on the student motivation are parental communication, student characteristics and study fields. Students selected as the study group and most researches were conducted in USA and Turkey.
- 6) **Sogunro, Olusegun Agboola (2015)⁶⁵** in the research study **“Motivating Factors for Adult Learners in Higher Education”** carried on a study of 203 university students and found out eight top most motivating factors for adult learners in higher education. The various factors include quality of instruction; quality of curriculum; relevance and pragmatism; interactive classrooms and effective management

⁶³ Alkaabi, S. A. R., Alkaabi, W., & Vyver, G. (2017). Researching Student Motivation. Contemporary Issues in Education Research (CIER), 10(3), 193–202. <https://doi.org/10.19030/cier.v10i3.9985>
<https://clutejournals.com/index.php/CIER/article/view/9985>

⁶⁴Yilmaz, Ercan; Sahin, Mehmet; Turgut, Mehmet (2017). Variables Affecting Student Motivation Based on Academic Publications Journal of Education and Practice www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.8, No.12, 2017
<https://files.eric.ed.gov/fulltext/EJ1140621.pdf>

⁶⁵ Sogunro, O. A. (2015). Motivating Factors for Adult Learners in Higher Education. International Journal of Higher Education, v4 n1 p22-37 2015
<https://eric.ed.gov/?id=EJ1060548>

practices; progressive assessment and timely feedback; self-directedness; conducive learning environment; and effective academic advising practices. The study concluded that these eight factors are critical to eliciting or enhancing the will power in students in higher education toward successful learning.

- 7) **Al-Dhamit, Yahya and Kreishan, Lana (2013)⁶⁶** in the research study **“Gifted students’ intrinsic and extrinsic motivations and parental influence on their motivation: from the self-determination theory perspective”** described and investigated a sample of school gifted students’ intrinsic and extrinsic motivations, and the role of their parents in fostering motivational achievements in Jordan. In the study, 122 gifted students were selected to complete a questionnaire which was adapted from Pelletier, Fortier and Vallerand⁶⁷ *et al.* Results showed that students were highly intrinsically and extrinsically motivated. The results also showed significant correlation between intrinsic and extrinsic motivations and perceived competence and parental support scales except for parental control. Other interesting findings were also found regarding the aforementioned constructs. The results further reveal some significant differences in control, achievement goal, amotivation and competence support between genders and education of parents.
- 8) **P’Pool, K.B. (2012)⁶⁸** in the research study **“Using Dweck’s Theory of Motivation to Determine How a Student’s View of Intelligence Affects Their Overall Academic Achievement”** had explored how student intelligence was directly linked to the goals and motivation held by students when engaged in academic settings. For the research study, the researcher had given questionnaire developed by Dr. Carol Dweck to the students. The students had to respond to statements in order to determine their individual theory of intelligence. Once this was accomplished, multiple student variables (including but not limited to first semester GPA, second semester GPA, ACT composite score, age, and college coursework) were compared to their view of intelligence to determine if any correlations existed. The results of the research study showed that there was no significant difference between students’ who viewed intelligence as malleable or fixed with regard to first

⁶⁶ Al-Dhamit, Y. and Kreishan, L. (2013). Gifted students’ intrinsic and extrinsic motivations and parental influence on their motivation: from the self-determination theory perspective. *Journal of Research in Special Educational Needs*. doi: 10.1111/1471-3802.12048

⁶⁷ Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M, Senecal, C. and Vallieres E. F. (1992). The academic motivation scale: a measure of intrinsic, extrinsic, and a motivation in education, *Educational and Psychological Measurement*, vol. 52, no. 4, pp. 1003–1017, 1992.

http://selfdeterminationtheory.org/SDT/documents/1992_VallerandPelletierBlaisBriere_EPM.pdf

⁶⁸ P’Pool, K.B. (2012). Using Dweck’s Theory of Motivation to Determine How a Student’s View of Intelligence Affects Their Overall Academic Achievement. Masters Theses & Specialist Projects. Paper 1214.<http://digitalcommons.wku.edu/theses/1214>

semester GPA scores or the comparison between first and second semester GPA scores. The data from this research study supported other research by finding that approximately 15% of students were identified in the undecided category regarding their view of intelligence. There was no significant difference found between entity theorists and incremental theorists in regards to the theory of intelligence students held determining whether or not their second semester GPA scores would increase or decrease when compared to their first semester GPA scores. In addition, a significant difference was found between student views of intelligence and their ACT composite score. It was also discovered that there was a positive correlation between how students viewed intelligence and how they viewed talent development. The research findings from this study suggested that praise can be both motivating as well as detrimental to students. It was also found that it is important that the correct type of praise be used when the students are addressed. According to the research the teachers can play a direct role by helping students to change their view of intelligence from an entity view, in which they view intelligence as a fixed trait, to an incremental view, in which they view intelligence as a malleable trait and able to change through their own effort and hard work.

- 9) **Chong, Yit Sean and Ahmed, Pervaiz K (2012)⁶⁹** in the research study **“Understanding Student Motivation in Higher Education Participation: A Psychometric Validation of the Academic Motivation Scale in the Malaysian Context”** validated the psychometric properties of the Academic Motivation Scale (AMS) in the Malaysian higher education context and also identified the dominant forms of motivation amongst university students in Malaysia. The research was carried through a questionnaire survey was given out to 9 participating universities which consist of public universities, locally established private universities and foreign branch campuses in Malaysia. The sample size consisted of 1,919 business undergraduate students in Malaysia. The AMS was validated through confirmatory factor analysis and the results confirmed the 7-factor structures proposed by Vallerand *et al.* (1992). The findings of the study also found that the university students were predominantly motivated by extrinsic motivation which is externally

⁶⁹Chong, Yit Sean and Ahmed, P. K. (2012). Understanding Student Motivation in Higher Education Participation: A Psychometric Validation of the Academic Motivation Scale in the Malaysian Context. Monash University Sunway Campus, Selangor, Malaysia DOI: 10.7763/IPEDR. 2012. V53. 26 <http://www.ipedr.com/vol53/026-BCPS2012-C10028.pdf>

regulated, extrinsic motivation with internalised reasons and intrinsic motivation to know.

- 10) **Ryan, Richard & Deci, Edward (2000)**⁷⁰ in the research study “**Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being**”, have stated that human beings can be proactive and engaged or, alternatively, passive and alienated, largely as a function of the social conditions in which they develop and function. Accordingly, research guided by self-determination theory has focused on the social-contextual conditions that facilitate versus forestall the natural processes of self-motivation and healthy psychological development. Specifically, factors have been examined that enhance versus undermine intrinsic motivation, self-regulation, and well-being. The findings have led to the postulate of three innate psychological needs--competence, autonomy, and relatedness--which when satisfied yield enhanced self-motivation and mental health and when thwarted lead to diminished motivation and well-being. Also considered is the significance of these psychological needs and processes within domains such as health care, education, work, sport, religion, and psychotherapy.

2.1.2 Literature on Learner Engagement

- 1) **Covas, F., & Veiga, F. H. (2021)**⁷¹ in the research study “**Student engagement in Higher Education, age and parental education level**” carried on the study of student engagement in schools at Portugal as a multi-dimensional construct. The objective was to analyse how the variables age and parental education relate to student engagement in school. The sample consisted of 715 Portuguese public Higher Education students from the Lisbon area. The data was collected through an online survey. The research tool used was Student Engagement in School: a Four-Dimensional Scale – Higher Education Version. Through data analysis it was found that students of age 26 or older scored considerably higher results in engagement than younger colleagues, but also highlighted significant differences of engagement in the affective, behavioural and agentic dimensions, depending on parental

⁷⁰ Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>

⁷¹ Covas, F., & Veiga, F. H. (2021). Student engagement in Higher Education, age and parental education level. *Estudos de Psicologia (Campinas)*, 38, e200020. <https://doi.org/10.1590/1982-0275202138e200020>
<https://www.scielo.br/j/estpsi/a/JRDvQyptQcDn55yqjcWWjbL/>

education. The results, while partially corroborating the revised literature, suggest future in-depth studies.

- 2) **Rajabalee, Yousra Banoor *et al.* (2019)⁷²** in the research study “**A study of the relationship between students’ engagement and their academic performances in any Learning environment**” aimed to understand the relationship between students’ engagement in an online module with their overall performances. The researchers analysed students’ learning activities in an online module. The three measurable indicators were identified and considered for assessing learner engagement within the module were (i) the number of completed learning activities; (ii) importance level (as per course outcomes) of completed learning activities; and (iii) activities requiring platform presence. It was reported that there is a significant but weak positive correlation between the engagement of students in the online module and their performances in the final learning activity. It was further observed that when continuous learning activities were considered, there was a very strong positive correlation between engagement and performances. Overall it was concluded that the average engagement level of students was significantly higher for good performers as compared to low performance and also the mean performance of highly engaged students was significantly better than those with low engagement levels.
- 3) **Schnitzler, Katharina *et al.* (2020)⁷³** in the research study “**All better than being disengaged: Student engagement patterns and their relations to academic self-concept and achievement**” investigated how the number of hand-raising interacts with student cognitive and emotional engagement in various engagement patterns. The researcher had analysed how these engagement patterns relate to academic self-concept as an antecedent and achievement as an outcome. In an empirical study, high school students (N = 397) from 20 eighth-grade classrooms were surveyed and videotaped during one mathematics school lesson. The design included a pre- and post-test, with the videotaping occurring in between. Five within-student

⁷² Rajabalee, Y. B. *et al.* (2019). A study of the relationship between students’ engagement and their academic performances in an eLearning environment *Learning and Digital Media* 2020, Vol. 17(1) 1–20 sagepub.com/journals-permissions DOI: 10.1177/2042753019882567 journals.sagepub.com/home/ldm <https://journals.sagepub.com/doi/pdf/10.1177/2042753019882567>

⁷³ Schnitzler, K. *et al.* (2020). All better than being disengaged: Student engagement patterns and their relations to academic self-concept and achievement *European Journal of Psychology of Education* (2021) 36:627–652 <https://doi.org/10.1007/s10212-020-00500-6> <https://link.springer.com/content/pdf/10.1007/s10212-020-00500-6.pdf>

engagement patterns were identified by latent profile analysis: disengaged, compliant, silent, engaged, and busy. Students with higher academic self-concept were more likely to show a pattern of moderate to high engagement. Compared with students with low engagement, students with higher engagement patterns gained systematically in end-of-year achievement. These findings illustrate the power of person-centred analyses to illuminate the complexity of student engagement. They imply the need for differentiation beyond disengaged and engaged students and bring along the recognition that being engaged can take on various forms, from compliant to busy.

- 4) **Carmona-Halty MA, Schaufeli WB and Salanova M (2019)⁷⁴** in the research study **“The Utrecht Work Engagement Scale for Students (UWES–9S): Factorial Validity, Reliability, and Measurement Invariance in a Chilean Sample of Undergraduate University Students”** examined the within–network construct validity of the UWES–9S in a convenience sample of 1502 Chilean students (52% were female) ranging between 18 and 25 years old. The results of confirmatory factor analysis supported a solution with three related factors that fit significantly better than a one-factor solution. The three subscales (i.e., vigour, dedication, and absorption) and the overall UWES–9S showed satisfactory internal consistency. The results of multiple–group confirmatory factor analysis supported gender invariance. Overall, the UWES–9S was found to be a reliable and valid scale to assess academic engagement in Chilean undergraduate university students.
- 5) **Halverson, L.R., & Graham, C.R. (2019)⁷⁵** in the research study **“Learner engagement in blended learning environments: A conceptual framework”** reviewed the existing literature on learner engagement and identifies the constructs most relevant to learning in general and blended learning in particular. The authors presented a possible conceptual framework for engagement that includes cognitive and emotional indicators. The research also measured these engagement indicators in technology mediated learning contexts. This paper has critically reviewed models, definitions, and constructs of learner engagement and suggested factors for

⁷⁴Carmona-Halty M.A., Schaufeli W.B. and Salanova M. (2019). The Utrecht Work Engagement Scale for Students (UWES–9S): Factorial Validity, Reliability, and Measurement Invariance in a Chilean Sample of Undergraduate University Students. *Front. Psychol.* 10:1017.

doi: 10.3389/fpsyg.2019.01017

⁷⁵ Halverson, L.R., & Graham, C.R. (2019). Learner engagement in blended learning environments: A conceptual framework. *Online Learning*, 23(2), 145-178. doi:10.24059/olj.v23i2.1481

https://www.researchgate.net/publication/333562669_Learner_Engagement_in_Blended_Learning_Environments_A_Conceptual_Framework

a conceptual framework grounded in existing engagement literature and contextualized for blended settings

- 6) **Borup, J. (2016)⁷⁶** in the research study “**Teacher Perceptions of Learner-Learner Engagement at a Cyber High School. International Review of Research in Open and Distributed Learning**” have carried on a case study using teacher surveys and interviews at a full-time online charter high school to examine teacher perceptions of learner–learner interactions. The research analysis led to the identification of four student behaviours that positively impacted student engagement and learning. The students’ behaviour identified were befriending, motivating, instructing, and collaborating. Further in the research it was noted that teachers also identified several drawbacks to learner–learner interactions such as bullying and cheating. Furthermore, it was noted in the research the appearance of tension between providing for students’ individual needs and requirements for collaborative learning opportunities.
- 7) **Ruslin A., Anisa S. et al. (2014)⁷⁷** in the research study “**Students’ Engagement by Age and Gender: A Cross-Sectional Study in Malaysia**” aimed to explore students’ engagement level at schools based on gender and age in Malaysia. Student’s engagement is a fashionable term to describe the degree of their engagement in classroom learning. Students’ engagement has three main components, namely affective, behaviour and cognitive using cross-sectional approach. The study sample comprising of students who were 12, 14 and 16 years old was selected randomly. The instrument employed in this study is an adapted version of Students’ Engagement Inventory by Lam Shui Fong. The results of the study indicated that as students grow older, they find that school activity is less interesting or fail to cater for their growth need. It is suggested that school administrators and teachers plan for a more conducive atmosphere and meaningful learning activities. Different age groups and genders among students need to be addressed differently to create a better learning environment in accordance with their emotional, psychological and cognitive development.

⁷⁶Borup, J. (2016). Teacher Perceptions of Learner-Learner Engagement at a Cyber High School. *International Review of Research in Open and Distributed Learning*, 17(3), 231–250. <https://doi.org/10.19173/irrodl.v17i3.2361>
<https://www.erudit.org/en/journals/irrodl/2016-v17-n3-irrodl05024/1066233ar/>

⁷⁷Ruslin A., Anisa S. et al (2014) Students’ Engagement by Age and Gender: A Cross-Sectional Study in Malaysia Middle-East Journal of Scientific Research 21 (10): 1886-1892, 2014 ISSN 1990-9233 © IDOSI Publications, 2014 DOI: 10.5829/idosi.mejsr.2014.21.10.85168

- 8) **Andrews, Matthew C. (2011)**⁷⁸ in the research study “**Meaningful engagement in educational activity and purposes for learning**” had put forth that student learning and activity engagement should consider motives beyond the pursuit of good grades in the classroom, prestigious college credentials, and going to school. The studies highlight the moral inspirations and cultural habits behind students’ engagement in life activities, and how inspiration and habits help to direct learning in life. A case study of an ordinary high school senior articulates a common motive to enrol in college to achieve success in life. Comparative case studies contrast emotional experiences with social responsibilities in order to articulate purposes for learning beyond standardized achievement. The research findings advocated that volunteer community service, engagements with family, involvement in religious activities, and working for pay could provide inspiration for students to engage in learning in life.
- 9) **Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008)** in the research study “**Student engagement with school: critical conceptual and methodological issues of the construct**” supported the connection between engagement, achievement, and school behaviour across levels of economic and social advantage and disadvantage. The research agreed on a number of interrelated conceptual and methodological issues that must be addressed to advance this construct, particularly for designing data-supported interventions that promote school completion and enhanced educational outcomes for all students. The parts of concern as noted in the research were (a) develop consensus on the name of the construct, (b) identify reliable measures of the dimensions of the construct, and (c) complete the construct validation studies needed to move research and intervention forward.
- 10) **Jennifer A. Fredricks, Phyllis C. Blumenfeld and Alison H. Paris (2004)**⁷⁹ in the research study “**School Engagement: Potential of the Concept, State of the Evidence**”, in which they reviewed about definitions, measures, precursors, and outcomes of engagement; discusses limitations in the existing research; and also suggested improvements. They concluded that, although much has been learned, the potential contribution of the concept of school engagement to research on

⁷⁸Andrews, M. C. (2011). *Meaningful engagement in educational activity and purposes for learning* [Ph. D. Research Thesis Stanford University] <http://purl.stanford.edu/qp476bx9339>

⁷⁹Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>

student experience has yet to be realized. They call for richer characterizations of how students behave, feel, and think-research that could aid in the development of finely tuned interventions.

2.1.3 Literature on both Motivation and Learner Engagement

- 1) **Elise Lavoué. *et al.* (2021)⁸⁰** in the research study “**Analysing the relationships between learners’ motivation and observable engaged behaviours in a gamified learning environment**” had come up with a model of engagement that distinguishes two types of engaged behaviour: an achievement-oriented engagement for initially intrinsically motivated learners or high achiever learners, and a perfection-oriented engagement for low achiever learners. A third type of behaviour has been observed corresponding to learners who answer questions very quickly which was left unclassified in the research. The model contributed to a better understanding of 1) how gamification can affect learners’ engaged behaviours during the learning activity according to their initial motivation and player profile, 2) how the different types of engagement impact learners’ motivation. Although learners’ engagement may differ according to the context, the proposed approach can be applied in any context to investigate learners’ behaviours.
- 2) **Korlat S, Kollmayer M, Holzer J, Lüftenegger M, Pelikan ER, Schober B., and Spiel C (2021)⁸¹** in the research study “**Gender Differences in Digital Learning During COVID-19: Competence Beliefs, Intrinsic Value, Learning Engagement, and Perceived Teacher Support**” conducted a study including both biological sex and gender role self-concept in order to investigate the role of gender in different components of this stereotyped domain in a more differentiated way. A total of 19,190 Austrian secondary school students (61.9% girls, $M_{age} = 14.55$, $SD_{age} = 2.49$, age range 10–21) participated in an online study in April 2020 and answered questions regarding their competence beliefs, intrinsic value, engagement, and perceived teacher support in digital learning during the pandemic-induced school closures. The results of the study showed higher perceived teacher

⁸⁰ Elise L. *et al.* (2021). Analysing the relationships between learners’ motivation and observable engaged behaviours in a gamified learning environment. *International Journal of Human-Computer Studies*, Elsevier, In press, [ff10.1016/j.ijhcs.2021.102670](https://doi.org/10.1016/j.ijhcs.2021.102670). [ffhal-03221038https://hal.archives-ouvertes.fr/hal-03221038/document](https://hal.archives-ouvertes.fr/hal-03221038/document)

⁸¹ Korlat S, Kollmayer M, Holzer J, Lüftenegger M, Pelikan ER, Schober B., and Spiel C (2021) Gender Differences in Digital Learning During COVID-19: Competence Beliefs, Intrinsic Value, Learning Engagement, and Perceived Teacher Support *Front. Psychol.* 12:637776. doi: 10.3389/fpsyg.2021.637776 <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.637776/full>

support, intrinsic value, and learning engagement among girls than boys, while no significant sex differences were found in competence beliefs regarding digital learning.

- 3) **Miriam Cents-Boonstra, Anna Lichtwarck-Aschoff, Eddie Denessen, Nathalie Aelterman & Leen Haerens (2021)**⁸² in the research study “**Fostering student engagement with motivating teaching: an observation study of teacher and student behaviours**” investigated classroom observations to describe how teachers applied Self-Determination Theory (SDT) related (de)motivating teaching behaviours to foster students’ engagement. Results from 120 observed lessons of 43 teachers indicated there were distinct relations between motivating teaching behaviours and student engagement. It was found that motivating teaching behaviours were the higher levels of relatedness support and guidance during activities in lessons in which students showed the highest levels of engagement. On the other side the lessons where students were least engaged, teachers showed higher levels of chaotic teaching behaviours. The researchers carried with the analysis of behaviours within lowly and highly engaging lessons. They showed that teachers in highly engaging lessons were observed to start with high levels of enthusiasm and after about ten to fifteen minutes focused on activating their students by offering room for experimenting and support while students worked on assignments. In contrast, teachers in lowly engaging lessons seemed to have a tendency to employ demotivating teaching behaviour at the start of the lesson.
- 4) **Tsao, Jui-Jung *et al.* (2021)**⁸³ in the research study “**Toward a Motivation-Regulated Learner Engagement WCF Model of L2 Writing Performance**” had shown that the effectiveness of written corrective feedback (WCF) on writing performance depends on learners’ engagement with WCF and its associated motivational state. There is an inner causal relationships between motivation, learner engagement with WCF, and writing performance is also shown in the research study. Two independent Chinese undergraduate samples partook in the pilot and formal phases of the study. The results of the study showed that cultivation of an ideal self-image significantly promoted both intrinsic and extrinsic

⁸²Cents-Boonstra M.*et al.* (2021) Fostering student engagement with motivating teaching: an observation study of teacher and student behaviours, *Research Papers in Education*, 36:6, 754-779, DOI: 10.1080/02671522.2020.1767184
<https://www.tandfonline.com/doi/epub/10.1080/02671522.2020.1767184?needAccess=true>

⁸³Tsao, Jui-Jung *et al.* (2021). Toward a Motivation-Regulated Learner Engagement WCF Model of L2 Writing Performance
<https://doi.org/10.1177/21582440211023172>
<https://journals.sagepub.com/doi/full/10.1177/21582440211023172>

motivations and enhanced learners' engagement with WCF, but ought-to self-image was found to have no such effects. Both intrinsic motivation and learner engagement with WCF could directly influence writing scores, with the latter being more explanatory than the former.

- 5) **Mustamiah, D. and Widanti, N. (2018)⁸⁴** in the research study “**Learning Motivation as Predictor of Student Engagement in Private Junior High Schools Students**” had observed that student engagement is an intensity of behaviour, emotional quality and personal effort of active involvement of students in learning activities. When students engage in learning, they will participate and engage in academic and social activities and will have regulatory compliance and involvement in learning activities. Such students will possibly get good learning achievement. Thus, motivating students to learn is very important and is a challenge to achieve. This research aimed to determine the effect of achievement motivation toward student engagement mainly in coastal area of Surabaya. The sample of this study consisted of 226 students of total population of 540 students from 3 private Junior High Schools in Bulak sub district Surabaya. This research uses quantitative approach with regression design to determine the extent to which student engagement could be predicted through achievement motivation. Instruments used to measure learning motivation and student engagement that developed by researchers in this research based on several theories. Findings indicated that learning motivation could affect student engagement, so that in this research learning motivation could be predictor of student engagement. The results also obtained that subjects in this research had moderate level of student engagement, and also had learning motivation in the moderate category.
- 6) **Senior, Rowena M. et al. (2018)⁸⁵** in the research study “**The Rules of Engagement**”: Student Engagement and Motivation to Improve the Quality of Undergraduate Learning” had aimed to examine the range of student motivations that facilitate their engagement with the quality assurance processes of their respective programme of study. The research study was conducted through three

⁸⁴ Mustamiah, D. and Widanti, N. (2018). Learning Motivation as Predictor of Student Engagement in Private Junior High Schools Students. DOI: 10.5220/0008591204860493 In Proceedings of the 3rd International Conference on Psychology in Health, Educational, Social, and Organizational Settings (ICP-HESOS 2018) - Improving Mental Health and Harmony in Global Community, pages 486-493 ISBN: 978-989-758-435-0

⁸⁵ Senior R. M. et al. (2018). “The Rules of Engagement”: Student Engagement and Motivation to Improve the Quality of Undergraduate Learning JOURNAL=Frontiers in Education VOLUME=3
 URL=<https://www.frontiersin.org/article/10.3389/feduc.2018.00032> DOI=10.3389/feduc.2018.00032 ISSN=2504-284X
<https://www.frontiersin.org/articles/10.3389/feduc.2018.00032/full>

focus groups in a stratified manner to ascertain student motivations and to triangulate an effective set of recommendations for subsequent practice. The participants consisted of engaged and non-engaged first year undergraduate students as well as student-facing staff who were asked to comment on their experiences as to why students would want to engage as a course representative. Nominal group technique was applied to the emerging thematic data in each group. Three key motivational themes emerged that overlapped across all focus groups i.e., a need for individual representation that makes a change, a desire to develop a professional skillset as well as a desire to gain a better understanding of their course of study.

- 7) **Alioon, Yasaman (2016)** in the research study “**An investigation of student engagement, motivation and attitudes towards course content in a mobile-learning enhanced course**” aimed to investigate the students engagement, motivation and attitudes toward course content in a mobile-learning enhanced computer networking course where authentic collaborative activities were designed, developed and implemented. The participants of the study were 3rd grade students enrolled in the course. The effect of the activities on student’s engagement, motivation and attitudes toward course content was investigated using a mixed-method research method. The activities were implemented for two subsequent semesters where the content and the instructional method were modified based on the findings from the first implementation before implementing it for the second time to collect quantitative data on student engagement and attitudes toward course content two surveys were used. In addition, for measuring student’s motivation a questionnaire was used. In order to further analyse the effect of the activities on student’s engagement and motivation, follow up interviews were carried out in both semesters. The findings of the study indicated that the personal development was the component with the highest mean score in both semesters, followed by satisfaction from the course in the first implementation, and collaborative-learning in the second implementation, as the components of student’s engagement.
- 8) **Phillips, Cynthia A. (2016)**⁸⁶ in the research study “**A correlational study of the motivation and engagement in teachers: experience and effectiveness**” had carried on a correlational study to determine if there is any relationship between the

⁸⁶Phillips, C. A. (2016). *A correlational study of the motivation and engagement in teachers: experience and effectiveness*. [Doctor of Education: Liberty University]. <https://core.ac.uk/download/pdf/58827075.pdf>

motivation and engagement level of induction (first four years) teachers as compared to veteran (five or more years) at Liberty University, Lynchburg, VA. The research was carried on by an online survey on the relationship of motivation and engagement and the number of years of experience of the respondents by using Teacher Keys Effectiveness System (TKES, 2013) and the Motivation and Engagement Scale (MES-W, 2012) developed by Martin (2012). The researcher had used the overall score on the teacher effectiveness scale as specified by the researcher and a commercially available tool to measure motivation and engagement. Based on the study it was found that there was no statistically significant relationship found between the criterion variables of the motivation and engagement scale, and the predictor variables of years of experience for the two groups.

- 9) **Curtis, Rebecca Foerster (2016)** in the research study “**Increasing engagement and motivation**” had constructed a theoretical framework that identified specific voice, choice, and goal setting strategies that created an impact on student motivation and engagement. The study was conducted qualitatively through semi-structured interviews and observations with two teachers and six students to study about the strategies that were used in increasing motivation and engagement in the students. The prime finding identified in the study was that partnership that leads to leadership and goal setting surfaced were the most important. The specific strategies as well as a strong student teacher relationship influenced autonomy and classroom environments. The identified themes as well as characteristics, greater motivation and engagement ensued in the findings.
- 10) **Govender, Cookie M. (2012)⁸⁷** in the research study “**Motivation of higher education students: a single student engagement case study**” had found that in order for higher education students to perform well academically, they need to be engaged and intrinsically or self-motivated. According to the research findings the learners require motivational programmes with tools and techniques to guide them to take responsibility for their learning, perform well at assessments and graduate successfully. The research was conducted on a group of higher education students to investigate whether the implementation of a specific motivational intervention programme called ‘Concepts for Academic Performance’ results in improved

⁸⁷ Govender, C.M. (2012). Motivation of higher education students: a single student engagement case study. *The Journal of Teaching and Learning*, 7, 14-23.

performance, responsible attitudes and increased throughput rate. The aims of the research were to engage and motivate the learners. These were achieved by instilling a positive attitude towards learning, and by measuring if the motivational programme increases student throughput rate through improved performance. The research involved the use of both quantitative and qualitative data. The data were gathered, analysed and compared at pre-test and post-test phases. The findings revealed that students achieved higher academic scores in their post-test versus their pre-test. They also had developed a positive attitudes towards learning and assessment after they had experienced the motivational programme.

- 11) **Saeed and Zyngier (2012)** in the research study “**How Motivation Influences Student Engagement: A Qualitative Case Study**” had used Ryan and Deci’s (2000) Self-Determination Theory (SDT) to better understand the linkage between motivation and engagement in combination with Schlechty’s Student Engagement Continuum. The analysed the impact of intrinsic and extrinsic motivation on students’ different engagement types. The study seeks to understand which type of motivation – intrinsic or extrinsic – is more closely aligned to authentic student engagement. The researchers had adopted a qualitative research framework and data was collected from one elementary school class. The results of the research demonstrated that intrinsically motivated students are more competent and engaged in their learning than students who are not intrinsically motivated. The research findings also confirmed that disengaged students may do their work but without interest and commitment, whereas, engaged students work hard and attempt to master their learning achieving the highest academic results they are capable of obtaining within their learning context. The research also proved that disengaged students may do their work but without interest and commitment, whereas, engaged students work hard and attempt to master their learning achieving the highest academic results they are capable of obtaining within their learning context.

2.2 Studies from India

2.2.1 Literature on Motivation

- 1) **Das, Kajal (2021)**⁸⁸ in the research study “**Kasturba Gandhi Balika Vidyalaya KGBV Scheme as Facilitator to Academic Motivation and Life Satisfaction of**

⁸⁸ Das, K. (2021). *Kasturba Gandhi Balika Vidyalaya KGBV Scheme as Facilitator to Academic Motivation and Life Satisfaction of the Female Learners*. [Ph.D. Research Thesis: Sidho Kanho Birsha University]. <http://hdl.handle.net/10603/337442>

the Female Learners” determined the impact of Kasturba Gandhi Balika Vidyalaya (KGBV) scheme on development of academic motivation and life satisfaction of the female learners. The research study was carried out through the descriptive survey method within ex-post-facto research design. A sample of 200 KGBV hostel dwellers (considered as study group) and 247 female day scholars (considered as reference group) were randomly chosen from different schools having KGBV hostels in West Bengal by stratified random sampling technique. From the research study it was concluded that the results of descriptive presentation it might be concluded that the female students of KGBV group were strongly motivated academically and well satisfied in life. Again, from the results of the comparative analysis it might be concluded that there was positive impact of the KGBV scheme in development of academic motivation in self-efficacy, intrinsic value, cognitive strategy use, self-regulation and management of test anxiety; and life satisfaction in family, friends, school, living environment, self, and MSLSS in totality of the KGBV hostel dwellers. In multiple regression analysis it was observed that all of the facets of academic motivation kept positive impact on development of life satisfaction. The results of Pearson correlation indicated that self-determined motives (intrinsic motivation, integrated, identified and external regulation) display the highest correlations with the frequency of environmental behaviours.

- 2) **Shet, Chandana (2020)⁸⁹** in the research study **“Effect of parenting styles on study habits achievement motivation and coping with stress among adolescents”** showed that authoritative parenting style is the most effective style with regards to development of effective study habits and achievement motivation in adolescents” revealed that authoritative parenting is the most effective parenting style for the development of children, their effective study habits and achievement motivation in adolescents.
- 3) **Mishra, Rishish *et al.* (2015)⁹⁰** in the research study **“Role of Motivation in Promoting Self Learning at Higher (Education in India)”** attempted to explore and present a new emerging theory of motivation of the present time in a modified

⁸⁹ Shet, C. (2020). Effect of parenting styles on study habits achievement motivation and coping with stress among adolescents [Ph.D. Research Thesis: SNDT Women’s University]. <http://hdl.handle.net/10603/325900>

⁹⁰ Mishra, R. *et al.* (2015). Role of Motivation in Promoting Self Learning at Higher (Education in India). Indian Journal of Applied Research Volume : 5 | Issue : 2 | Feb 2015 | ISSN - 2249-555X
[https://www.worldwidejournals.com/indian-journal-of-applied-research-\(IJAR\)/fileview/February_2015_1424256774__96.pdf](https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/fileview/February_2015_1424256774__96.pdf)

way which has been experienced much but explored less. It was concluded in the study that in India despite of many issues and problems that Indian higher education system faces, the Indian students stay motivated towards their goal and beat the competitive entrance exams. It was noted that the tough environment of competition for entering into the Technical and Management institutions is enough to motivate millions of students to achieve high levels, especially in the areas of science and technology. Thus, it was concluded that the motivation level of students not only depends on education system but on the urge, the desire and the willingness to achieve something in life that keeps on motivating them.

- 4) **Pakira, J., and Mohakud, M.M. (2017)⁹¹** in the research study “**Achievement Motivation of Higher Education Level Students of West Bengal**” aimed to identify the achievement motivation among the higher education. The research tool used was a cross-sectional Survey Research. Achievement motivation questionnaire (AMQ) (Prativa Deo & Asha Mohan). It was distributed among 348 college and University students of West Bengal (Male-175 & Female-173) who had been selected purposively and Bengali version was adopted by the researchers. Frequency, Mean, Standard Deviation (SD), Percentage Analysis, Independent “t” test and one way ANOVA were used to analyse data. The findings revealed that most of the students i.e. 98% possessed average motivation (63.5%) to above average motivation (15.5%), very few students i.e. 20.1% possessed below average achievement motivation and almost negligible percentage of students i.e. 0.9% showed low achievement motivation. There is no significant difference in Achievement motivation among UG & PG Students with respect to Gender, Level of Education, and tuition status, Family Income. There is significant difference in achievement motivation between the students with regard to their habitat
- 5) **Shekhar, Chandra & Devi, Rachna (2012)⁹²** in the research study “**Achievement Motivation across Gender and Different Academic Majors**” carried out a research with the objectives to investigate the gender related differences and differences across academic majors on achievement motivation among college

⁹¹ Pakira, J., and Mohakud, M.M. (2017). Achievement Motivation of Higher Education Level Students of West Bengal. *Eduquest an International Refereed Journal in Education*. Vol. 6, Issue: I ISSN: 2277 – 3614
https://www.researchgate.net/publication/342364939_ACHIEVEMENT_MOTIVATION_OF_HIGHER_EDUCATION_LEVEL_STUDENTS_OF_WEST_BENGAL

⁹² Shekhar, C. & Devi, R.(2012). Achievement Motivation across Gender and Different Academic Majors. *Journal of Educational and Developmental Psychology*; Vol. 2, No. 2; 2012 ISSN 1927-0526 E-ISSN 1927-0534. Published by Canadian Center of Science and Education. doi:10.5539/jedp.v2n2p105 URL: <http://dx.doi.org/10.5539/jedp.v2n2p105>

students. The study was carried on 80 undergraduate students of various colleges from Jammu region, 40 males and 40 females (ages 18-23 years) selected by purposive sampling method. As per research plan all 80 subjects were selected on the basis of gender (males and females) and academic majors (arts and sciences) using Achievement Motivation Scale. t-Test was used for deriving the results. Significant difference was found between the achievement motivation of sciences and arts stream students and achievement motivation among male and female college students. The differences indicate significant role of gender and academic majors in achievement motivation of college students

- 6) **Singh, Singh, and Singh (2012)⁹³** in the research study “**Motivation Levels among Traditional and Open Learning Undergraduate Students in India**” aimed to compare the levels of motivation between students in the open education system (OES) and in the traditional education system (TES) in India. The study also investigated the motivation levels of male and female students in the two systems. The researchers had prepared an Academic Motivation Scale (AMS). They had administered on the students of TES (n = 200) and OES (n = 151). The results of the study showed that there exist significant differences in the level of motivation between the students of TES and OES. The study concluded that it is the presence or absence of extrinsic motivation which is predominantly responsible for this difference.
- 7) **Pal, Sujit (2011)⁹⁴** in the research study “**Study on environmental awareness self-efficacy and motivation of the teacher trainees in relation to environmental education and other selected external factors**” investigated into relevant variables, especially motivational variables, which are most likely to arouse environmental behaviours. The researcher also tried to understand the role of different kinds of motivation in eliciting environment conscious behaviours. The Sample was drawn on the basis of its traits viz. gender, place of residence, course of study, status of the teacher trainees etc. from the list of NCTE recognised Secondary Teachers’ Training Institutions of West Bengal. The e result pertaining

⁹³ Singh, Singh, and Singh (2012). Motivation Levels among Traditional and Open Learning Undergraduate Students in India. *International Review of Research in Open and Distance Learning* 13(3) DOI: 10.19173/irrodl.v13i3.1050
https://www.researchgate.net/publication/277861379_Motivation_Levels_among_Traditional_and_Open_Learning_Undergraduate_Students_in_India

⁹⁴ Pal, S. (2011). *Study on environmental awareness self-efficacy and motivation of the teacher trainees in relation to environmental education and other selected external factors*. [Ph. D. research Thesis: University of Calcutta]. <http://hdl.handle.net/10603/174323>

to environmental activity indicates that there are significant differences present in between the trainee teachers' possessing higher and lower SDM (Self-Determined Motivation). Environmental action shows maximum significant positive correlation with Self-Determined Motivation. It was assumed in the research that because of higher self-determined motivation trainee teachers belonging to the group were more environmentally active. So to perform the environmental activity trainee teachers need higher level of self-determination. Results of Pearson correlation indicated that self-determined motives (intrinsic motivation, integrated, identified and external regulation) displayed the highest correlations with the frequency of environmental behaviours. The magnitude of the correlations gradually decreases and, eventually, grows negative as the motivational types become less self-determined. The results of the study supported the hypothesized influence of the self-determination continuum given by Deci & Ryan (1985).

2.2.2 Literature on Learner Engagement

- 1) **Gupta, S., & Nagpal, R. (2021)⁹⁵** in the research study **“University Student Engagement Scale: Development and Validation in Indian Context”** aimed to elucidate the development of three-dimensional construct of student engagement based on psycho-education oriented measures such as behavioural, cognitive and emotional engagement. The data was collected from 470 students studying in science, humanities, and engineering streams from different universities of Punjab, through random sampling technique. The results of the study included factor analysis of the scale reveals that 31 items had three factors, behavioural, cognitive, and affective engagement. The research displayed good internal reliability ($\alpha=0.889$) and adequate convergent and discriminant validities are reported, which establishes good psychometric properties of the scale.
- 2) **Deka, Pradeep Kumar (2021)⁹⁶** in the research study **“Factors Influencing Student Engagement in Online Learning during the COVID – 19 pandemic period in India”** ensured that students who experience online learning for the first time are assessed. The sample for the research study consisted of 290 undergraduate

⁹⁵Gupta, S., & Nagpal, R. (2021)⁹⁵. University Student Engagement Scale: Development and Validation in Indian Context. MIER Journal of Educational Studies Trends and Practices, 11(2), 223–235. <https://doi.org/10.52634/mier/2021/v11/i2/1903>
<http://www.mierjs.in/index.php/mjestp/article/view/1903>

⁹⁶Deka, P. K. (2021) Factors Influencing Student Engagement in Online Learning during the COVID – 19 pandemic period in India Journal of Management in Practice (Online Only) Vol 6, No 1 (2021) ISSN:2456-1509
<https://journals.dbuniversity.ac.in/ojs/index.php/JoMP/article/view/2171>

and postgraduate students. The research revealed that student's engagement in online learning is influenced by factors like student characteristics, instructor characteristics, learning environment, course design, course content, administrative support, instructor characteristics. Parameters related to e-learning were studied to better understand the factors that influence student engagement. From the research study it was concluded that most of the education system has been primarily converted to online education due to an emergency without adequate preparedness. Therefore, the factors identified for a normal on-line learning process may not be similar for on-line education provided in emergency situations.

- 3) **Singh, T. and Ningthoujam, S. (2020)⁹⁷** in the research study “**Precursors of Student Engagement in Indian Milieu**” investigated the identify of pre-cursors or antecedents of student engagement in Indian institutes. The researchers made use of 717 respondents from University students. The results of the study indicated that student engagement is a function of certain situational factors such as academic facilities, faculty, role of administration as well as some personality factors viz. locus of control and self-efficacy.
- 4) **Srivastav, A.K. & Rita (2017)⁹⁸** in the research study “**Student Engagement and Student Success: A Novel Concept for Novel India**” had taken the literature review as a medium to understand the present status and factors influencing employability of PG students. The research also discusses the benefits and linkage between student engagement and student success, especially in the context of employability skills of management students. Student engagement is a goal in itself and it was highlighted in the research study. The need to recognise, accommodate and provide opportunities for engagement to students with specific motivations and goals was emphasised in the study.
- 5) **Baldev R. Sharma, Pradip K. Bhaumik (2013)⁹⁹** in the research study “**Student Engagement and its Predictors: An Exploratory Study in an Indian Business School**” pursued to identify the dimensions of student engagement through exploratory factor analysis. It also analysed a pool of items drawn from various

⁹⁷Singh, T. and Ningthoujam, S. (2020). Precursors of Student Engagement in Indian Milieu. Theoretical Economics Letters, 10, 102-118. <https://doi.org/10.4236/tel.2020.101007>

<https://www.scirp.org/journal/paperinformation.aspx?paperid=98128>

⁹⁸Srivastav, A.K. & Rita (2017) Student engagement and student success: a novel Concept for novel India IMPACT: International Journal of Research in Business Management (IMPACT: IJRBM) ISSN (P): 2347-4572; ISSN (E): 2321-886X Vol. 5, Issue 9, Sep 2017, 87-96

<https://oaji.net/articles/2017/490-1507547561.pdf>

⁹⁹Sharma B.R., Bhaumik P.K. (2013). Student Engagement and Its Predictors: An Exploratory Study in an Indian Business School. Global Business Review. 2013; 14(1):25-42. doi:10.1177/0972150912466364

sources, including some of the authors' own. Using the five dimensions identified through this process, the study assessed the level of student engagement among the first-year students of a two-year full-time MBA programme of an Indian business school. The research study used regression analysis to identify the predictors of student engagement. It was found in the study that out of the five dimensions of student engagement identified, two behavioural dimensions (diligent pursuit of studies and active academic participation) were found to be relatively highly rated, while the two affective dimensions (emotional engagement and commitment to the institution) emerged as moderately rated. The fifth dimension (participation in co-curricular activities) was the lowest rated and also had the highest variability. The predictors of student engagement revealed that, except for commitment to the institution, the level of prediction (in terms of R^2) was quite modest. The multiple correlations between commitment to the institution and four of its predictors were found to be the highest ($R^2 = 0.3381$).

2.2.3 Literature on both Motivation and Learner Engagement

- 1) **Malini S. (2020)¹⁰⁰** in the research study **“An empirical investigation to study and analyse the relationship between motivation spiritual intelligence and student engagement and their influence on student performance”** investigated on the requirement of a significant and basic section of emotional intelligence in order to commence his/her spiritual development in an effective manner. The statistical population of the research study included 523 valid respondents in total. The mode of collection of primary data has been availed through the distribution of questionnaires to the target respondents through an online survey data collection tool. It was found that there was a significant relationship between the factors involving spiritual intelligence, motivation and student engagement.
- 2) **Rajendran R., Banerjee G., Pathak D. and Sivamohan S. (2020)¹⁰¹** in the research study **"Impact of Gender on Motivation, Engagement and Interaction Behaviour in Mobile assisted learning of English"** explored three research questions that examined gender-based variation in motivation, engagement and

¹⁰⁰ Malini S. (2020). *An empirical investigation to study and analyse the relationship between motivation spiritual intelligence and student engagement and their influence on student performance*. [Ph.D. Research Thesis: Anna University]. <http://hdl.handle.net/10603/344708>

¹⁰¹ Rajendran R., Banerjee G., Pathak D. and Sivamohan S. (2020). "Impact of Gender on Motivation, Engagement and Interaction Behavior in Mobile assisted learning of English," 2020 IEEE 20th International Conference on Advanced Learning Technologies (ICALT), 2020, pp. 230-232, doi: 10.1109/ICALT49669.2020.00075. <https://ieeexplore.ieee.org/abstract/document/9155848>

interaction behaviour of school students who use Hello English. Students' motivation level and their subsequent engagement with the app are measured through two separate questionnaires. Gender difference in students' interaction behaviour is analysed using their interaction data with the app. The research study findings were that female students are highly motivated, prefers to interact with the app more often and spend more time on app compared to male students.

- 3) **Falleiro, Sameena (2013)¹⁰²** in the research study “**A study of the effectiveness of learning management system on student engagement motivation and performance in higher education**” consisted of research sample of students in the experimental and control group of 13 each respectively. They were enrolled in a compulsory course titled Software Engineering during the last (sixth) semester (in a six semester B.Sc. Computer Science, Undergraduate degree programme offered by Goa University) for the academic year 2012±2013. The total size of sample selected for the final study was 26. In the experimental group there were 4 boys and 9 girls and in the control group there were 6 boys and 7 girls. The study has reported a significant correlation between overall LMS features and student engagement, motivation and academic performance.

2.3 Conclusion

Motivation and Learner Engagement has gained research interest both for its effects on achievement and dropout rates and the degree to which it can be influenced through learners' learning environments (Curtis, 2017). There is a need to motivate our learners and have them engaged in their learning. The review of literature indicated there was a strong relationship between Motivation and Learner Engagement. The literature supports that both Motivation and Learner Engagement play a significant role in compelling the learner to pursue his or her education. The literature reviewed indicated that there is limited current research on the relationship of motivation and learner engagement from Indian milieu. Apart from this the researches done in Higher education from the Indian context was also found to be less. So this provided a research gap which was worth investigating. As a developing nation there is a need to get away from the traditional style of teaching. There is a need to identify the constructs that inspire learners to push themselves to pursue their education.

¹⁰²Falleiro, S. (2013). *A study of the effectiveness of learning management system on student engagement motivation and performance in higher education*. [Ph.D. Research Thesis SNDT Women's University] <http://hdl.handle.net/10603/67288>

CHAPTER 3

RESEARCH DESIGN

3.1 Introduction

Research is the process of systematic and in-depth study or search for any particular topic, subject or area of investigation, backed by the collection, compilation, presentation and interpretation of relevant details or data. Research is a voyage of discovery research is a scientific and systematic search for pertinent information on a specific topic. Research as a scientific inquiry involves describing and examining the phenomena and their relationships.

The research design identifies the evidence needed to address the research purposes, objectives and questions, i.e. the logic that underpins the connections between purposes, objectives, questions, data and conclusions drawn.

P.M. Cook has given a very comprehensive and functional definition of the term research “Research is an honest exhaustive, intelligent searching for facts and their meanings or implications with reference to a given problem. The product or findings of a given piece of research should be an authentic, verifiable and contribution to knowledge in the field studied.”¹⁰³

Winner compared the research design to an architect’s plan for the structure of a building. The designer of researcher performs a role similar to that of the architect.¹⁰⁴

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data.¹⁰⁵

Characteristics of Research Design

- **Neutrality:** The results projected in the research should be free from bias and neutral.

¹⁰³ Singh, Y. K. (2006). *Fundamental of Research Methodology and Statistics*, New Age International.p.12

¹⁰⁴<https://egyankosh.ac.in/bitstream/123456789/23406/1/Unit-1.pdf>

¹⁰⁵ Kumar, R. (2005), *Research Methodology: A Step-by-Step Guide for Beginners*, SAGE Publications, 2005, p. 93

- **Objectivity:** The findings obtained by the research should be objective. It is possible by allowing more than one person to agree between the final scores/ conclusion of the research.
- **Reliability:** If the similar research is carried out time and again in a similar setting, it must give similar result. So the researcher must frame the research questions to make it reliable and provide similar outcomes.
- **Validity:** Any measuring device can be said to be valid if it measures what it is expected to measure and nothing else. To make a research valid, the questionnaire framed before research must be framed accordingly.
- **Generalization:** The information collected from given sample must be utilized for providing a general application to the large group of which the sample is drawn.
- **Theory base:** Good research strategies reflect the theories which are being investigated. Where specific theoretical expectations can be hypothesised, they are incorporated into the design.
- **Situational:** Good research designs reflect the settings of the investigation.
- **Feasible:** The sequence and timing of events are carefully thought out. Potential problems in measurement, adherence to assignment, database construction and the like, are anticipated.
- **Redundant:** Good research designs have some flexibility built into them. Often, this flexibility results from duplication of essential design features.
- **Efficient:** Good designs strike a balance between redundancy and the tendency to overdesign.

3.2 Need for a Research Design

Research design is a mapping strategy which is based on sampling technique. Research design is the framework or the blueprint to conduct the research.

The two basic purposes of research design are:¹⁰⁶

¹⁰⁶ Kumar, R. (2005), *Research Methodology: A Step-by-Step Guide for Beginners*, SAGE Publications, 2005, p. 94

- 1) to provide answers to research questions, and
- 2) to control the variance.

A research design components and proposals should give an adequate attention to each appropriate and applicable design component. A good research design is a prerequisite to yield maximal information with minimal expenditure of effort, time and money. Research design, in fact, has a great bearing on the reliability of the results arrived at, and as such constitutes the firm foundation of the entire organization of the research work.

There is a need of a research design:

- To conceptualise an operational plan to undertake the various procedures and tasks required to complete the research study;
- To ensure that these procedures are adequate to obtain valid, objective and accurate answers to the research questions. This function is called as the control of variance;
- For the identification and/or development of procedures and logistical arrangements required to undertake a study;
- To have good quality in the research procedures for ensuring their validity, objectivity and accuracy.

3.3 Methodology of the present study

Research methods are of extreme importance in a research design. They describe the various steps to be adopted in solving a research problem, such as the manner in which the problems are formulated, the definition of terms, the choice of subjects for investigation, analysis and interpretation of data, and the processes of inferences and generalization. There are many ways that the research methodologies are classified. The categories of research methods are historical, descriptive and experimental.

- Historical research is the application of the scientific method of inquiry to historical problems.¹⁰⁷

¹⁰⁷ Best, J. W. & Kahn, J. V. (2017). *Research in Education*, (10th ed.). Pearson Education Inc. p. 87

- Descriptive research deals with the relationships between variables, the testing of hypotheses, and the development of generalizations, principles, or theories that have universal validity.¹⁰⁸
- *Experimental research* is a scientific approach to research, where one or more independent variables, are manipulated and applied to one or more dependent variables to measure their effect on the latter.¹⁰⁹

Research design is governed by ‘fitness for purpose’. The purposes of the research determine the design of the research which, in turn, informs the methodology.¹¹⁰

The research method used for the present study was descriptive research.

A descriptive study describes and interprets what is.¹¹¹ “Descriptive research does not involve the experiments per se. It seeks to discover the nature of the factors involved in a given situation, it seeks to determine the degree in which they exists, and it attempts to discover the links or relationship which exist between the factors” by Lovell and Lawon.¹¹²

Descriptive research studies the relationship between variables that exist at present in their natural setting. It also tests the hypotheses, develops generalizations, and results in some prediction. It is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. It is primarily concerned with the present, although it often considers past events and influences as they relate to current conditions. Descriptive research seeks to find answers to questions through the analysis of variable relationships. It is considered to be the most popular and widely used research method in education.

There are five descriptive research methods viz. correlational research, comparative research, causal-comparative research, survey research, and developmental research.¹¹³

Correlational research designs provide an opportunity to predict scores, and explain the relationship among variables. In correlational research designs, researchers use the correlation statistical test to describe and measure the degree of association (or

¹⁰⁸ Kumar, R. (2005). *Research Methodology: A Step-by-Step Guide for Beginners*, SAGE Publications. p. 10

¹⁰⁹ <https://www.formpl.us/blog/experimental-research>

¹¹⁰ Cohen, L., Manion, L., & Morrison, K. (2017). *Research Methods in Education* (8th ed.). Routledge. p.173

¹¹¹ Best, J. W. & Kahn, J.V. (2017). *Research in Education*. (10th ed.) Pearson Education Inc. p. 106.

¹¹² Pathak, R. P. (2011). *Research in Education and Psychology* (1st ed.). Dorling Kindersley (India) Pvt. Ltd, 2011, p 166.

¹¹³ Pandya, S. R. (2015). *Educational Research*, APH Publishing Corporation. p.88.

relationship) between two or more variables or sets of scores.¹¹⁴ In correlational research design, the researchers do not attempt to control or manipulate the variables as in an experiment; instead, they relate the variables using the correlation statistic. The degree of relationship is expressed in terms of coefficient of correlation.¹¹⁵ The magnitude of the relationship is determined through the use of coefficient of correlation.¹¹⁶ Thus, correlational researches interpret the magnitude and direction of the correlations.¹¹⁷

Correlational study does not specify cause and effect relationships between variables under consideration.¹¹⁸ Correlational research determines the nature, degree and direction of relationships between variables or using these relationships to make predictions. It is calculated using the following formula Pearson's product moment coefficient (r):

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

Where, r = Pearson Coefficient.

n= number of the pairs of the stock.

$\sum xy$ = sum of products of the paired stocks.

$\sum x$ = sum of the x scores.

$\sum y$ = sum of the y scores.

$\sum x^2$ = sum of the squared x scores.

$\sum y^2$ = sum of the squared y scores.

The coefficient of correlation tells us the way in which two variables are related to each other. It also helps us to understand how the change in one is influenced by the change in the other, with the direction and magnitude of the obtained measures. A coefficient of correlation between two variables cannot estimate in predicting the change in one

¹¹⁴ Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education. p. 338

¹¹⁵ <https://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one/11-correlation-and-regression>

¹¹⁶ Koul, L. (2021). *Methodology of Educational Research*, (5th ed.). Vikas Publishing House. p.131

¹¹⁷ Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education. p. 348

¹¹⁸ Pandya, S. R. (2015). *Educational Research*, APH Publishing Corporation. p.89

variable with that of other. For this reason, regression analysis is widely used for prediction and forecasting. The equation of the line of regression obtained by plotting the scores of two variables on a scatter plot helps to predict the score value of the dependent variable when the corresponding value of the independent variable is given.¹¹⁹ It is calculated using the following formula:

$$Y - M_y = r \frac{\sigma_y}{\sigma_x} (X - M_x) \text{ and } X - M_x = r \frac{\sigma_x}{\sigma_y} (Y - M_y)$$

In these equations, X and Y alternatively represent a given score and a score to be predicted. M_x and M_y represent means for the X and Y variables, σ_x and σ_y represent values of standard deviations for the distributions of X and Y scores, and r represents Pearson's r for the variables X and Y. Thus, these two regression equations can be used for prediction of scores of Y variable and other for the X variable respectively.

The present study was aimed at establishing relationship of motivation and learner engagement in higher education learners. **Descriptive correlational research method** was used to establish the relationship between the variables, and **regression analysis** was done to determine the extent to which they were related and prediction of the scores.

3.4 Population, Sample and the Setting

All the items under consideration in any research constitute a universe or population.¹²⁰ A **population** is a group of individuals who have the same characteristics.¹²¹ A complete enumeration of the entire population in a research study is very challenging and difficult to conduct. Within this target population, researchers then select a sample for study. So, often the researcher selects only a few items from the universe for the research study. The items so selected constitute what is technically called a sample. A **sample** is a subgroup of the target population that the researcher plans to study for generalizing about the target population.

In the present study, the population comprised of learners who are pursuing higher education belonging to regular or distance degree (both Undergraduate and

¹¹⁹ Mangal, S.K. (2012). *Statistics in Psychology and Education* (2nd ed.), PHI Learning Pvt. Ltd. p. 242.

¹²⁰ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers. p 13.

¹²¹ Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education, 2015, p. 140

Postgraduate) education program from Arts, Science, Commerce, Engineering, and Management streams. The samples were taken from the learners based on their enrolment in any form regular or distance degree (both Undergraduate and Postgraduate) education program, from Arts, Science, Commerce, Engineering, and Management streams, in and around Mumbai.

Refer Appendix A for the List Of Colleges.

3.5 Sampling and Sample Size

A technique which is used to select the sample from a larger population is called Sampling. Sampling techniques are used to select the sample from a larger population. There are two types of sampling methods:

- 1) **Probability Sampling** involves random selection, in which the choice of respondent is guided by probability principles, according to which every unit of the target population has a predetermined, calculable and non-zero probability chance of being selected.¹²² The various types are: Simple Random Sampling, Systematic Sampling, Stratified Sampling, Cluster Sampling.
- 2) **Non-Probability Sampling** involves non-random selection based on convenience or other criteria, allowing easy collection of data.¹²³ The various types are: Convenient Sampling, Purposive Sampling, Quota Sampling, Snowball Sampling.

The sample collection for this research study was done using Simple Random Sampling. In this type of sampling, the sampling units have an equal as well as independent chance of being selected in the sample.

Standardized tools were used to collect data. The data was collected from the samples online using Google Form.

The sample consisted of 423 learners based on their enrolment in any form regular or distance degree (both Undergraduate and Postgraduate) education program from Arts, Science, Commerce, Engineering, and Management streams, in and around Mumbai.

¹²²Pandya, S. R., *Educational Research*, APH Publishing Corporation, 2015, p.322

¹²³<https://www.scribbr.com/methodology/sampling-methods/>

Table 3.5.1 Sample size as per Gender

Gender	Number of Learners	Percentage
Female	277	65.48
Male	146	34.52
Total	423	100

Figure 3.5.1 Sample size as per Gender

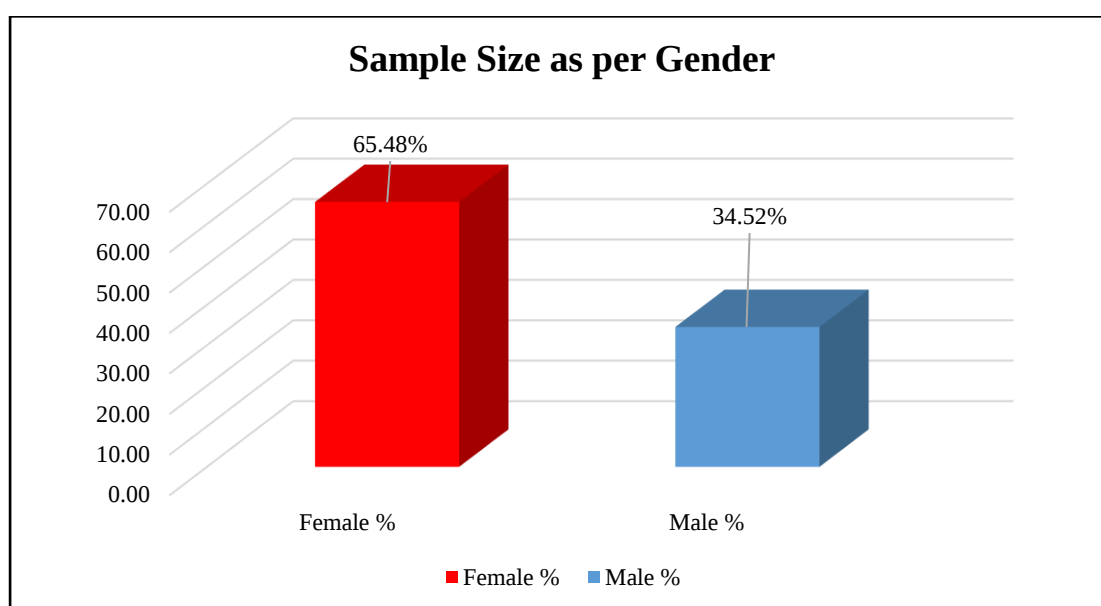


Table 3.5.2 Sample size as per Age of Learner

Age of Learner	Number of Learners	Percentage
Group 1 (17-27)	386	91.25
Group 2 (28-38)	26	6.15
Group 3 (39-49)	11	2.60
Total	423	100

Figure 3.5.2 Sample size as per Age of Learner

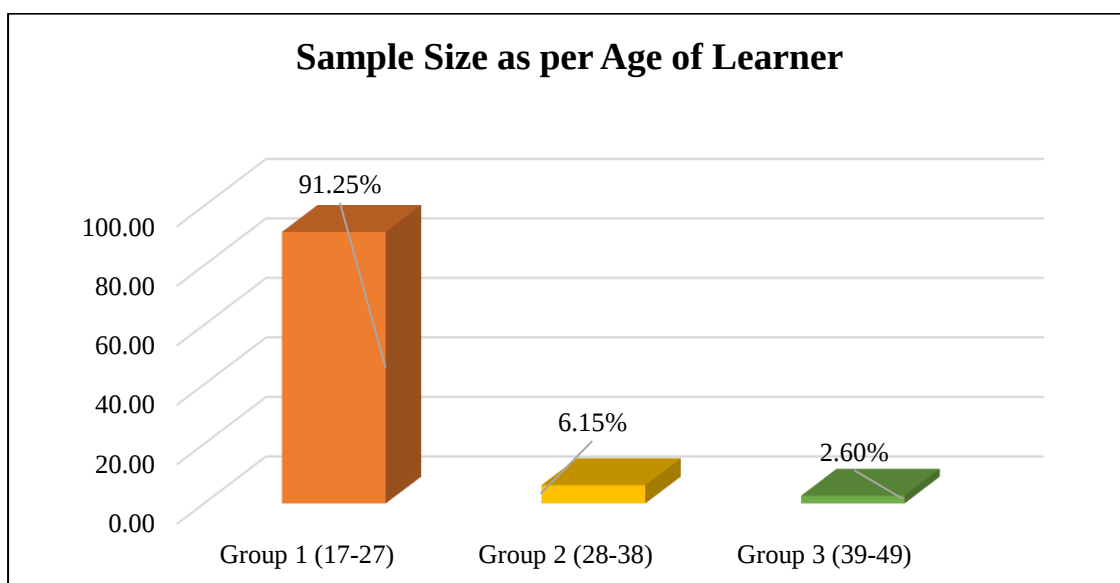


Table 3.5.3 Sample size as per Degree (UG/PG)

Degree (UG/PG)	Number of Learners	Percentage
UG	376	88.89
PG	47	11.11
Total	423	100

Figure 3.5.3 Sample size as per Degree (UG/PG)

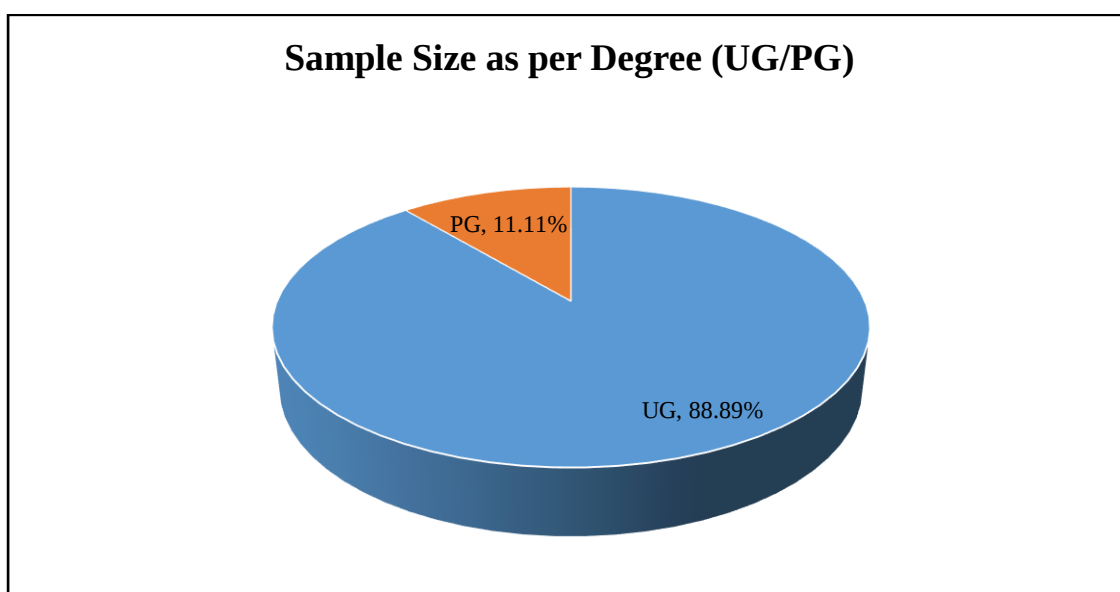


Table 3.5.4 Sample size as per Stream

Stream	Number of Learners	Percentage
Science	103	24.35
Commerce	224	52.96
Arts	40	9.46
Management	8	1.89
Engineering	48	11.35
Total	423	100

Figure 3.5.4 Sample size as per Stream

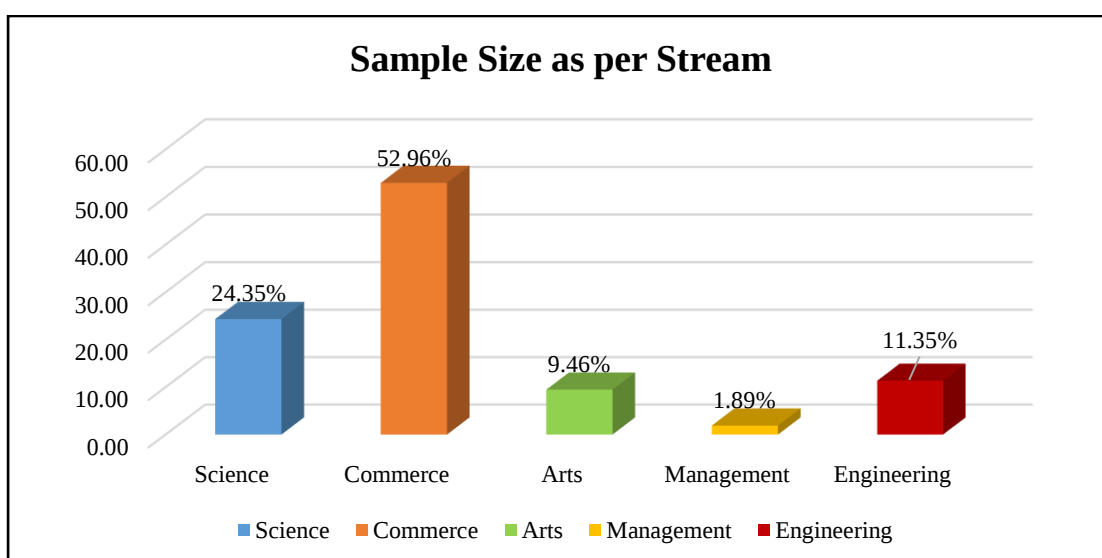
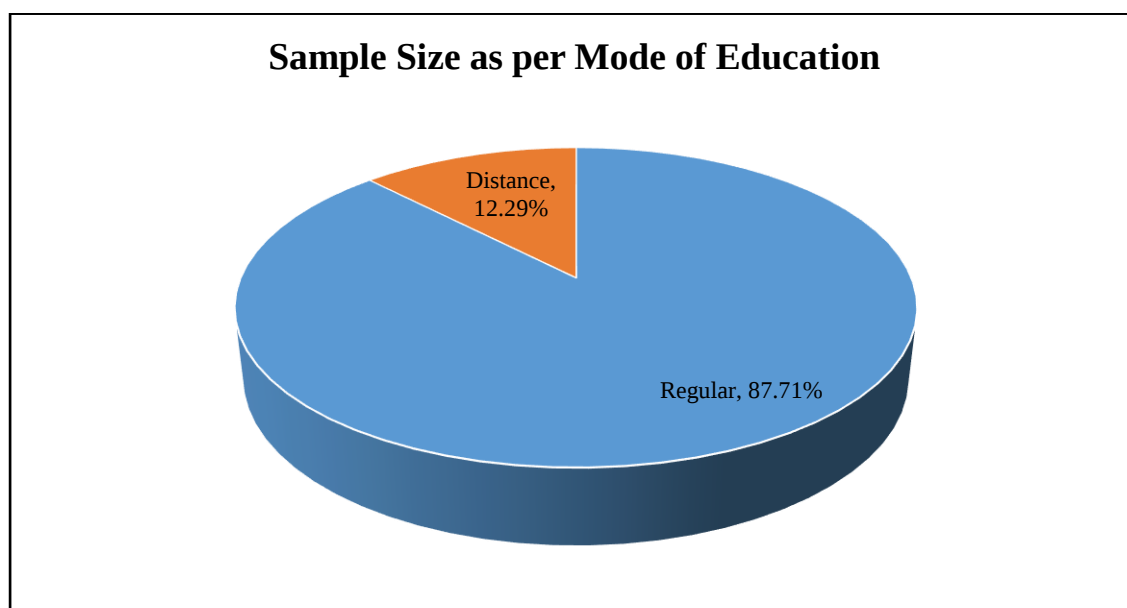


Table 3.5.5 Sample size as per Mode of Education

Mode of education	Number of Learners	Percentage
Regular	371	87.71
Distance	52	12.29
Total	423	100

Figure 3.5.5 Sample size as per Mode of Education



3.6 Tools of the Study

Researchers make use of many different methods and procedures for acquiring data. These are referred as tools and they employ distinctive ways of describing and quantifying the data.¹²⁴ Thus, it can be said that data collection tools are devices/instruments used to collect data.¹²⁵

For the present research study, the researcher wanted to do a correlational study between motivation and learner engagement among higher education learners. So the following two research tools were used

- 1) Academic Motivation Scale (AMS-C 28) College Version
- 2) University Student Engagement Inventory (USEI)

3.6.1 Tool used for measuring Motivation

The tool used for measuring the motivation in higher education learners was adapted from ACADEMIC MOTIVATION SCALE (AMS-C 28) COLLEGE VERSION developed by Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, Nathalie M. Brière, Caroline B. Senécal, Évelyne F. Vallières, (1992-93)¹²⁶.

¹²⁴ Best, J. W. & Kahn, J. V. (2017). *Research-in Education*. (10th ed.). Pearson Education Inc. p. 270.

¹²⁵<https://www.formpl.us/blog/data-collection-method#:~:text=Data%20collection%20tools%20refer%20to,tools%20used%20to%20collect%20data.>

¹²⁶Vallerand, R., Pelletier, L., Blais, M., Briere, N., Senecal, C., Vallieres, E. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, 1003-1017.

The questionnaire was originally developed in French titled as *Echelle de Motivation* (EME). The EME is based on the tenets of Self-Determination Theory and is composed of 28 items subdivided into seven sub-scales assessing three types of Intrinsic Motivation (to know, toward accomplishment, to experience stimulation); three types of extrinsic motivation (identified, introjected, external regulation), and amotivation. The instrument was the result of extensive research done in the realm of Self-Determination Theory. The EME was translated in English through appropriate methodological procedures. The English version of the scale was renamed as Academic Motivation Scale (AMS), and has satisfactory levels of internal consistency (mean alpha value=0.81), and temporal stability over a one-month period (mean test-retest correlation=0.79). The AMS is 7-point Likert Scale. It has been effectively adapted from the original AMS 7-point Likert scale into 5-point Likert Scale by Fallon (2019).¹²⁷

For the current research, the researcher has used the 5-point Likert Scale. Since amotivation was beyond the scope of study, so questions relevant to internal motivation and external motivation were only used.

The tool was an interval scale and comprised of 24 questions grouped under five point Likert Scale, where 1. Does not correspond at all, 2. Corresponds a little, 3. Corresponds moderately, 4. Corresponds a lot, 5. Corresponds exactly.

The items by categories are mentioned in table 3.6.1.

Table 3.6.1 Items by categories of Motivation Scale

Categories	Item Nos.
Intrinsic motivation - to know	2, 8, 14, 20
Intrinsic motivation - toward accomplishment	5, 11, 17, 23
Intrinsic motivation - to experience stimulation	4, 10, 16, 22
Extrinsic motivation - identified	3, 9, 15, 21
Extrinsic motivation - introjected	6, 12, 18, 24
Extrinsic motivation - external regulation	1, 7, 13, 19

¹²⁷ Fallon, E. (2019). *Academic Motivation and Student Use of Academic Support Interventions*. [Ph.D. Research Thesis: University of Toledo].
https://etd.ohiolink.edu/apexprod/rws_etd/send_file/send?accession=toledo1561972670652811&disposition=inline

For scoring purpose the markings for the items were done as shown in table 3.6.2

Table 3.6.2 Marking of Items of Motivation Scale

Item Nos.	Marking
1-24	From 1-5

Refer Appendix- B for the Motivation Tool

The researcher then conducted a pilot study with the learners from Higher Education belonging to both regular or distance education program from Arts, Science, Commerce, Engineering, Management streams. The maximum possible score was 120 while the minimum score was 24.

Since the tool was valid, the reliability was established using the split-half method. The scores of the even items were correlated with the scores of the odd items using Pearson's product moment coefficient (r)

Pearson's product moment coefficient

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

Where, r = Pearson Coefficient

n= number of the pairs of the stock

$\sum xy$ = sum of products of the paired stocks

$\sum x$ = sum of the x scores

$\sum y$ = sum of the y scores

$\sum x^2$ = sum of the squared x scores

$\sum y^2$ = sum of the squared y scores

From this value the internal consistency of the test was calculated using Spearman Brown Prophecy Formula (ρ)

$$\rho = \frac{2r}{1+r}$$

Table 3.6.3 Reliability of Motivation Scale (N=30)

Method	N	Σxy	Σx^2	Σy^2	Reliability coefficient (r_{xy})	Reliability Index (ρ)
Split half method	30	1463.833	1704.967	1962.167	0.80	0.89

The reliability index was 0.80 by split half method. Therefore, the test was reliable.

The motivation levels were determined in the following way:

Table 3.6.4 Score and Motivation Levels

Score	Motivation Levels
97-120	High
48-96	Moderate
24-47	Low

3.6.2 Tool used for measuring Learner Engagement

The tool used for measuring the learner engagement in higher education learners was adapted from University Student Engagement Inventory (USEI)¹²⁸ developed by João Maroco, Ana Lúcia Maroco, Juliana Alvares Duarte Bonini Campos and Jennifer A. Fredricks. The researchers had validated USEI composed of 15 items, supporting the tri-factorial structure of student engagement. They also documented evidence of adequate reliability, factorial, convergent and discriminant validities in a sample of Portuguese college students.

The research tool is broadly classified into three dimensions of learner engagement namely behavioural engagement, emotional engagement, and cognitive engagement.

¹²⁸ Maroco, J., Maroco, A.L., Campos, J.A.D.B. *et al.* (2016). University student's engagement: development of the University Student Engagement Inventory (USEI). *Psicol. Refl. Crit.* **29**, 21 (2016). <https://doi.org/10.1186/s41155-016-0042-8>. <https://prc.springeropen.com/articles/10.1186/s41155-016-0042-8#citeas>

The tool was in interval scale and comprised of 32 questions grouped under 5-point Likert Scale of 1. Never, 2. A few times, 3. Sometimes, 4. Most of the time, 5. Always.

The items by categories are as mentioned in table 3.6.5

Table 3.6.5 Items by categories of Learner Engagement Scale

Categories	Item Nos.
Behavioural Engagement (ECP)	1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31
Emotional Engagement (EE)	2, 5, 8, 11, 14, 17, 20, 23, 26, 29
Cognitive Engagement (ECC)	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 32

For scoring purpose the markings for the items were done as shown in table 3.6.6

Table 3.6.6 Marking of Items of Learning Engagement Scale

Item Nos.	Marking
1-7 and 9-32	From 1-5
8	From 5-1

Refer Appendix- C for Learner Engagement Tool

The researcher then conducted a pilot study with the learners from Higher Education belonging to both regular or distance education program from Arts, Science, Commerce, Engineering, Management streams. The maximum possible score was 160 while the minimum score was 32.

Since the tool was valid, the reliability was established using the split-half method. The scores of the even items were correlated with the scores of the odd items using Pearson's product moment coefficient (r)

Pearson's product moment coefficient

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

Where, r = Pearson Coefficient

n= number of the pairs of the stock

$\sum xy$ = sum of products of the paired stocks

Σx = sum of the x scores

Σy = sum of the y scores

Σx^2 = sum of the squared x scores

Σy^2 = sum of the squared y scores

From this value the internal consistency of the test was calculated using Spearman Brown Prophecy Formula (ρ)

$$\rho = \frac{2r}{1+r}$$

Table 3.6.7 Reliability of Learner Engagement Scale ($N=30$)

Method	N	Σxy	Σx^2	Σy^2	Reliability coefficient (r_{xy})	Reliability Index (ρ)
Split half method	30	2064.467	2296.967	2333.467	0.89	0.94

The reliability index was 0.89 by split half method. Therefore, the test was reliable.

The learner engagement levels were determined in the following way:

Table 3.6.8 Score and Learner Engagement Levels

Score	Learner Engagement Levels
129-160	High
64-128	Moderate
32-63	Low

3.7 Data Collection and Tabulation

Data collection is an essentially an important part of the research process so that the inferences, research questions, hypotheses or generalization are identified as valid,

verified as correct, or rejected as untenable.¹²⁹ The researcher got requisition of letter for collection of data and approached various colleges for collection of data.

Refer Appendix D for the Requisition Letter.

The sample data were collected through online distribution of questionnaire. Colleges from the list (*Appendix A*) were approached for data collection who gave permission for online data collection. The researcher then contacted the respective colleges' allocated faculty member, and shared the research questionnaire for data collection. The respective college faculties then passed the tool to their students. Additionally, the researchers also randomly distributed the research questionnaire to higher education learners through email and online social media platforms as well

The entire questionnaire took around 10 minutes to be filled and submitted online. The questionnaire was properly checked for any missing data before the dispersal for data collection.

The collected data was then carefully tabulated in terms of: Gender, Age Groups, Undergraduate and Postgraduate Degree, Different Streams, Mode of Education (Regular/Distance).

3.8 Analysis of Data

It is very important to consider the nature of data that is collected. For the current research, the data was collected solely in the quantitative form. So the analysis of data would involve both descriptive and inferential statistics, to analyse the results and draw conclusions.

Descriptive statistics implies a simple quantitative summary of a data set that has been collected. It helps to understand the experiment or data set in detail and conveys all about the required details that puts the data in perspective.

In the application of statistical treatments, two types of data are recognized:¹³⁰

- 1) *Parametric data*: Data of this type are measured data, and parametric statistical tests assume that the data are normally, or nearly normally, distributed. Parametric tests are applied to both interval-scaled and ratio-scaled data.

¹²⁹Koul, L. (2020). *Methodology of Educational Research*. (5th ed.). Vikas Publishing House. p.218

¹³⁰ Best, J. W. & Kahn, J. V. (2017). *Research in Education*. (10th ed.) Pearson Education Inc. p. 333.

- 2) *Nonparametric* data: Data of this type are either counted (nominal) or ranked (ordinal). Nonparametric tests, sometimes known as distribution-free tests, do not rest on the more stringent assumption of normally distributed populations.

In the present study, the data was nearly normally distributed therefore, the analysis was done using parametric statistical test.

Descriptive data analysis was done using:

- **Measures of Central Tendency:** Mean and median
- **Measures of Variability:** Standard deviation, Skewness and Kurtosis

Inferential statistics is used to test the tenability of the hypothesis formulated for the study. It helps to obtain the statistical significance of a result achieved. This allows formation of conclusions based on the sample to be valid for the whole population. It requires ascertaining the significance of the statistics at 0.95 and 0.99 level of significance, and generalizing the confidence or fiduciary limits within which the population parameters will lie. Inferential Data Analysis was done by using:

- **Pearson's Product-Moment coefficient of correlation:** to find the correlation between the Motivation and Learner Engagement in the higher education learner. The correlation was studied with reference to the moderator variables. The obtained value of correlation was interpreted as per the given in table 3.8.1

Table 3.8.1 Computed correlation coefficient and interpretation

The range of computed correlation coefficient	Interpretation
0 (zero value)	Zero relation, absolutely no relationship.
From ± 0.00 to ± 0.20	Slight, almost negligible relationship.
From ± 0.21 to ± 0.40	Low correlation, definite but small relationship.
From ± 0.41 to ± 0.70	Moderate correlation, substantial but small relationship.
From ± 0.71 to ± 0.90	High correlation, marked relationship.
From ± 0.91 to ± 0.99	Very high correlation, quite dependable relationship.
± 1	Perfect correlation, almost identical or opposite relationship.

- **t-test:** The t-test tells about how significant the differences between groups are. It lets the researcher know if those differences (measured in means) could have happened by chance.¹³¹ In this research, t-test was used to find the difference between Motivation and Learner Engagement in higher education learners in terms of: Gender, Undergraduate and Postgraduate Degree, Mode of Education (Regular/Distance).
- **ANOVA:** An ANOVA test is a way to find out if survey or experiment results are significant. It helps the researcher to figure out if there is need to reject the null hypothesis or accept the alternate hypothesis.¹³² In this research, ANOVA was used to find the difference between Motivation and Learner Engagement in higher education learners in terms of: Age Groups and Different Streams.

3.9 Conclusion

The research methodology principles were adhered to the best of the ability and capacity of the researcher. Conduction of all the research steps were carried out ethically by the researcher. The research investigation was unbiased without any preconceived notions and conclusions. The researcher carried analysis of data namely descriptive and inferential data analysis in the subsequent chapters.

¹³¹ <https://www.statisticshowto.com/probability-and-statistics/t-test/>

¹³² <https://www.statisticshowto.com/probability-and-statistics/hypothesis-testing/anova/>

CHAPTER 4

DESCRIPTIVE ANALYSIS

4.1 Introduction

Research consists of systematic observation and description of the characteristics or properties of objects or events, for the purpose of discovering relationships between variables.¹³³ The main purpose of a research study is to develop generalizations that can be used to explain phenomena and future predictions.¹³⁴ After data collection is done, the data has to be processed and analysed in accordance with the research outline. This is indispensable for both scientific study, and for ensuring that all relevant data are there for making contemplated comparisons and analysis.

4.2 Meaning and Need of Descriptive Analysis

Descriptive statistical analysis involves the description of a particular group. Descriptive statistical analysis limits generalization to the particular group of individuals observed. Conclusions drawn are not extended beyond the group, and any similarity to those outside the group cannot be assumed. They provide simple summaries about the sample and the measures. Together with graphics analysis, descriptive analysis form the basis of virtually every quantitative or qualitative analysis of data.

Descriptive statistics has the following purposes:

- 1) to provide basic information about variables in a dataset
- 2) to highlight potential relationships between variables
- 3) to present quantitative descriptions in a manageable form.

Descriptive statistics helps to summarize the overall trends or tendencies of the data, thus helping the researcher in understanding how varied the scores might be, and also providing an insight into where one score stands in comparison with others.¹³⁵

¹³³ Best, J. W. & Kahn, J. V. (2017). *Research in Education*. (10th ed.). Pearson Education Inc. p. 332

¹³⁴ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers p. 122

¹³⁵ Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education. p. 181

The measures used to describe the data set are measures of central tendency and measures of variability or dispersion.

4.3 Measures of Central Tendency

Measures of central tendency (mean, median and mode) describe data in terms of some sort of average.¹³⁶ Measures of central tendency estimates the point about which items have a tendency to cluster. Such a measure is considered as the most representative figure for the entire mass of data. Measure of central tendency is also known as statistical average.¹³⁷

The Mean, also known as arithmetic average. Mean is defined as the value got by dividing the total of the values of various given items in a series by the total number of items.

$$\bar{x} = \frac{\sum x_i}{n}$$

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{n}$$

$\bar{x}$ = The symbol we use for mean (pronounced as X bar)

Σ = Symbol for summation

x_i = Value of the i^{th} item x, $i = 1, 2, \dots, n$

n = total number of items

The Median is the middle score of a set of data that has been arranged in order of magnitude.

The Mode is the score that appears more frequently in the list of scores. On a histogram it represents the highest bar in a bar chart or histogram

When the frequency distribution for our data is skewed we usually prefer the median over the mean. When the data is perfectly normal, the mean, median and the mode are identical.

¹³⁶ Pathak, R. P. (2011). *Research in Education and Psychology* (1st ed.). Dorling Kindersley (India) Pvt. Ltd. p 310.

¹³⁷ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers. p 132

4.4 Measures of Variability

Variability indicates the spread of the scores in a distribution. This information helps to see how dispersed the responses are to items on an instrument. **The variance** indicates the dispersion of scores around the mean. It is also called the measure of spread of dispersion.

Some frequently used measures of variability are the range, variance and standard deviation.

- **Range** is obtained by subtracting the lowest score from the highest score of a data distribution.
- **Variance** is the sum of the squared deviation from the mean, divided by the total number of scores.
- **Standard deviation** is defined as the square-root of the average of squares of deviations, when such deviations for the values of individual items in a series are obtained from the arithmetic average. It is denoted by the symbol ‘ σ ’ (pronounced as sigma).

$$\text{Standard deviation}(\sigma) = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n}}$$

where, $\bar{x}$ = The symbol used for mean

Σ = Symbol for summation

x_i = Value of the i^{th} item x , $i = 1, 2, \dots, n$

n = total number of items

Standard deviation is the most widely used stable and reliable measure of variability, as it employs the mean for its computation. Standard deviation is denoted by the absolute dispersion or variability of distribution. The greater the amount of variability, the greater the standard deviation, the greater will be the magnitude of the deviation of the values from their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series; a large standard deviation means just the opposite. Thus, if we have two or more comparable series with identical or nearly identical means, it is the distribution with the smallest standard

deviation that has the most representative mean. Hence, standard deviation is extremely useful in judging the representativeness of the mean.

4.5 The Normal Probability Curve

The normal distribution is a continuous probability distribution that is symmetrical on both sides of the mean, so the right side of the centre is a mirror image of the left side. The area under the normal distribution curve represents probability and the total area under the curve sums to one. For a perfectly normal distribution the mean, median and mode will be the same value, visually represented by the peak of the curve.¹³⁸

Skewness refers to the lack of symmetry. A curve is said to be skewed when the distribution, mean and median lie at two different points and the balance is shifted to one side or the other. It is of two types: positive skewness and negative skewness. The distributions are said to be skewed negatively when there are many individual in a group with their scores higher than the average score of the group i.e. the value of median is greater than the value of mean. Similarly the distributions are said to be skewed positively when there are many individual in a group with their scores less than the average score of their group i.e. the value of median is less than the value of mean. If the skewness is negative then the distribution is skewed left. A positive measure of skewness indicates right skewness.¹³⁹

Kurtosis refers to (the divergence) in the height of the curve, especially in the peakedness. It is of three types: Platykurtic, Leptokurtic and Mesokurtic. A frequency distribution is said to be Mesokurtic, when it almost resembles the normal curve (neither too flattened nor too peaked). The value is equal to 0.263 in the case of a normal curve. Consequently, if the value of Kurtosis is greater than 0.263, the distribution is said to be Platykurtic; if less than 0.263, then the distribution was Leptokurtic.¹⁴⁰

Since the collected data is normally distributed, for the descriptive analysis of the data in the present study, the measures calculated were mean, median, standard deviation, skewness and kurtosis. Graphical methods have been adopted for translating numerical facts into more concrete and understandable form.

¹³⁸ <https://www.simplypsychology.org/normal-distribution.html>

¹³⁹ https://opentextbc.ca/introbusinessstatopenstax/chapter/skewness-and-the-mean-median-and-mode/#M06_Ch02_fig003

¹⁴⁰ Mangal S.K. *Statistics in Psychology and Education*. New Delhi: PHI Learning Pvt. Ltd. 2012. p. 114

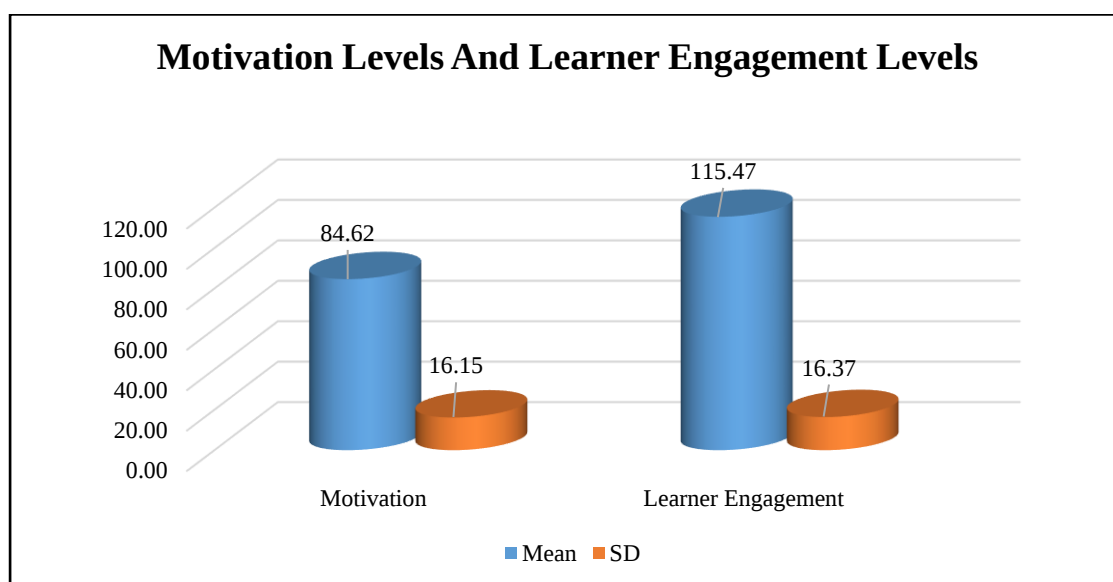
4.6 Description of Statistics

4.6.1 Correlation between Motivation Levels and Learner Engagement Levels of higher education learners

Table 4.6.1 Motivation Levels and Learner Engagement Levels

Variable s	N	Mean	Median	SD	SE _M	Skew	Kurt
M	423	84.62	86	16.15	0.79	-0.33	0.08
LE		115.47	116	16.37	0.80	-0.08	-0.07

Figure 4.6.1 (i) Motivation Levels and Learner Engagement Levels



From Table 4.6.1 and Figure 4.6.1 (i)

- The mean value of the Motivation Levels of higher education learners was 84.62 and standard deviation was 16.15. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners who have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.08 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.
- The mean value of the Learner Engagement of higher education learners was 115.47 and standard deviation was 16.37. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed.

This indicates that there are many higher education learners who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.07 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.

Figure 4.6.1 (ii) Correlation between Motivation and Learner Engagement

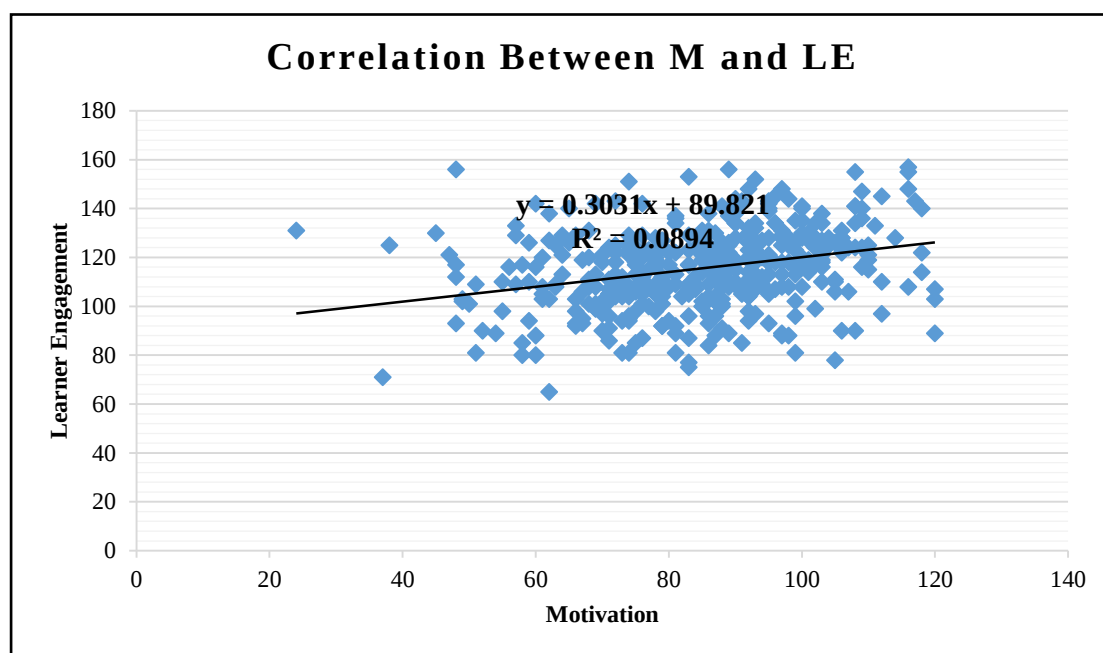


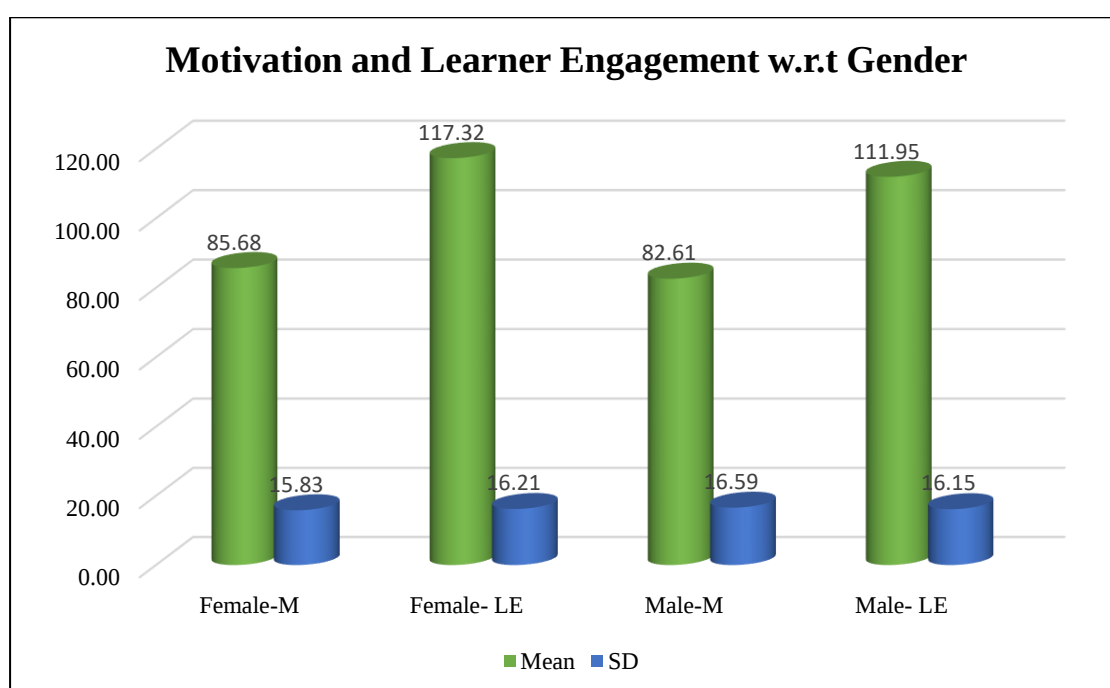
Figure 4.6.1 (ii) shows the obtained value of R^2 as 0.09 among the higher education learners. The obtained value is very low and indicates that the line of regression does not fit the data properly i.e. the correlation is weak.

4.6.2a: Correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to Gender

Table 4.6.2a Motivation Levels and Learner Engagement Levels: Gender

Gender	N	Variables	Mean	Median	SD	SE _M	Skew	Kurt
Female	277	M	85.68	87	15.83	0.95	-0.44	0.01
		LE	117.32	118	16.21	0.97	-0.17	-0.10
Male	146	M	82.61	83	16.59	1.37	-0.12	0.37
		LE	111.95	111	16.15	1.34	0.09	0.26

Figure 4.6.2a (i) Motivation Levels and Learner Engagement Levels: Gender



From Table 4.6.2a and Figure 4.6.2a (i)

- The mean value was 85.68 and the standard deviation was 15.83 of the Motivation Levels of female higher education learners. The value of median was 87. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many female higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.01 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the female higher education learners.
- The mean value was 82.61 and the standard deviation was 16.59 of the Motivation Levels of male higher education learners. The value of median was 83. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many male higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.37 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the male higher education learners.
- The mean Motivation Levels score among female higher education learners was higher i.e. better than the male higher education learners.
- The mean value was 117.32 and the standard deviation was 16.21 of the Learner Engagement Levels of female higher education learners. The value of median was

118. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many female higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.10 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the female higher education learners.

- The mean value was 111.95 and the standard deviation was 16.15 of the Learner Engagement Levels of male higher education learners. The value of median was 111. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many male higher education learners have Learner Engagement Levels less than the average score of the group. The value of Kurtosis was 0.26 which is almost equal to the normal distribution value 0.263. Thus, the distribution was Mesokurtic among the male higher education learners.
- The mean Learner Engagement Levels score among female higher education learners was better than the male higher education learners.

Figure 4.6.2a (ii) Correlation between Motivation and Learner Engagement: Female Higher Education Learners

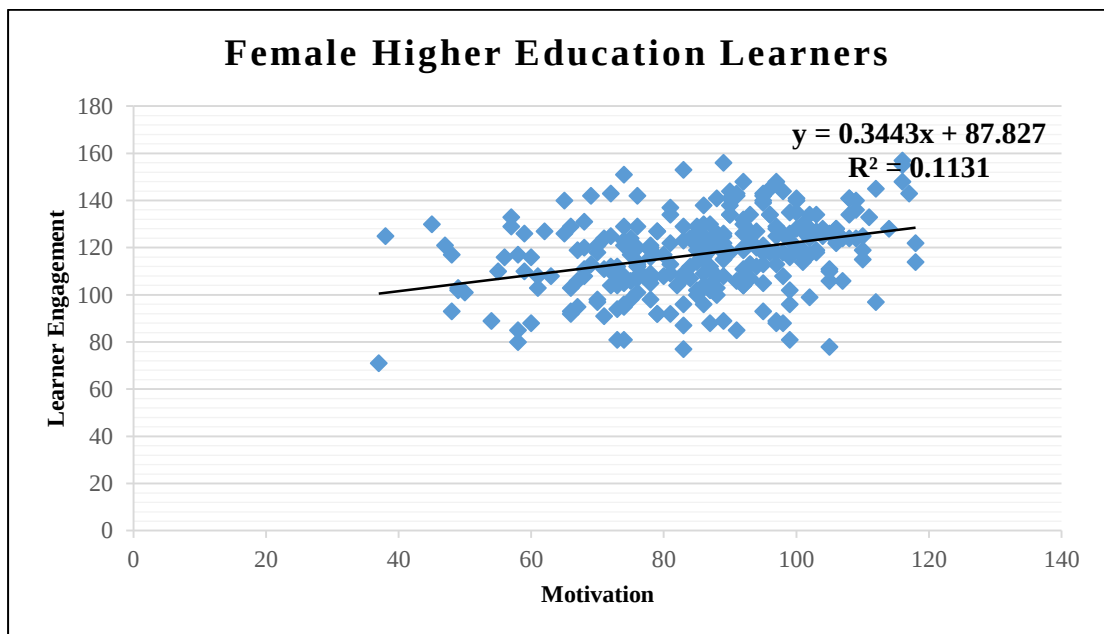


Figure 4.6.2a (iii) Correlation between Motivation and Learner Engagement: Male Higher Education Learners

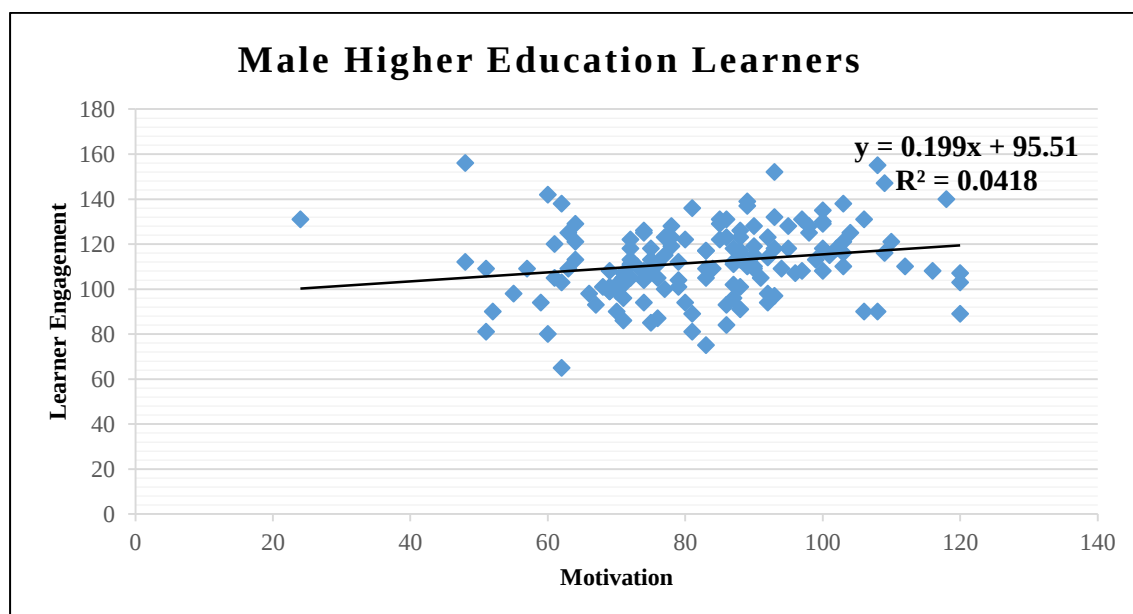


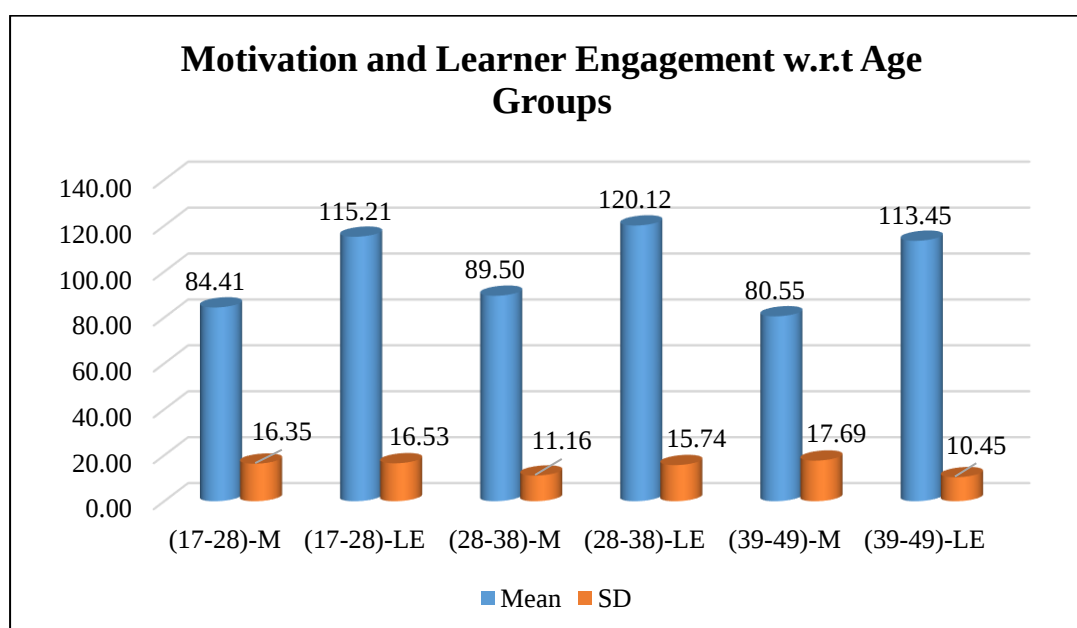
Figure 4.6.2a (ii) and 4.6.2a (iii) shows the obtained value of R^2 among female and male higher education learner as 0.11 and 0.04 respectively. Among both the genders, the value is very low and indicates that the regression line does not fit the data properly i.e. the correlation was weak.

4.6.2b: Correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to Age Groups

Table 4.6.2b Motivation Levels and Learner Engagement Levels: Age Groups

Age Group	N	Variables	Mean	Median	SD	SE _M	Skew	Kurt
17-27	386	M	84.41	86	16.35	0.83	-0.31	0.08
		LE	115.21	116	16.53	0.84	-0.07	-0.08
28-38	26	M	89.5	91	11.16	2.19	-0.08	-1.0
		LE	120.12	122	15.74	3.09	-0.15	-0.37
39-49	11	M	80.55	81	17.69	5.33	-0.09	-1.27
		LE	113.45	117	10.45	3.15	-0.74	0.24

Figure 4.6.2b (i) Motivation Levels and Learner Engagement Levels: Age Groups



From Table 4.6.2b and Figure 4.6.2b (i)

- The mean value of the Motivation Levels of higher education learners for the age group (17-27) was 84.41 and standard deviation was 16.35. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (17-27) who have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.08 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.
- The mean value of the Motivation Levels of higher education learners for the age group (28-38) was 89.5 and standard deviation was 11.16. The value of median was 91. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (28-38) who have Motivation Levels higher than the average score of the group. The value of Kurtosis was -1.0 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.
- The mean value of the Motivation Levels of higher education learners for the age group (39-49) was 80.55 and standard deviation was 17.69. The value of median was 81. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (39-49) who have Motivation Levels higher than the average

score of the group. The value of Kurtosis was -1.27 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.

- The mean Motivation Levels score for higher education learners from age group (28-38) was better than those from age group (17-27) which in turn was better than those from age group (39-49).
- The mean value of the Learner Engagement Levels of higher education learners for the age group (17-27) was 115.21 and standard deviation was 16.53. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (17-27) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.08 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.
- The mean value of the Learner Engagement Levels of higher education learners for the age group (28-38) was 120.12 and standard deviation was 15.74. The value of median was 122. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (28-38) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.37 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.
- The mean value of the Learner Engagement Levels of higher education learners for the age group (39-49) was 113.45 and standard deviation was 10.45. The value of median was 117. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (39-49) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.
- The mean Learner Engagement Levels score for higher education learners from age group (28-38) was better than those from age group (17-27) which in turn was better than those from age group (39-49).

Figure 4.6.2b (ii) Correlation between Motivation and Learner Engagement: Age Group (17-27)

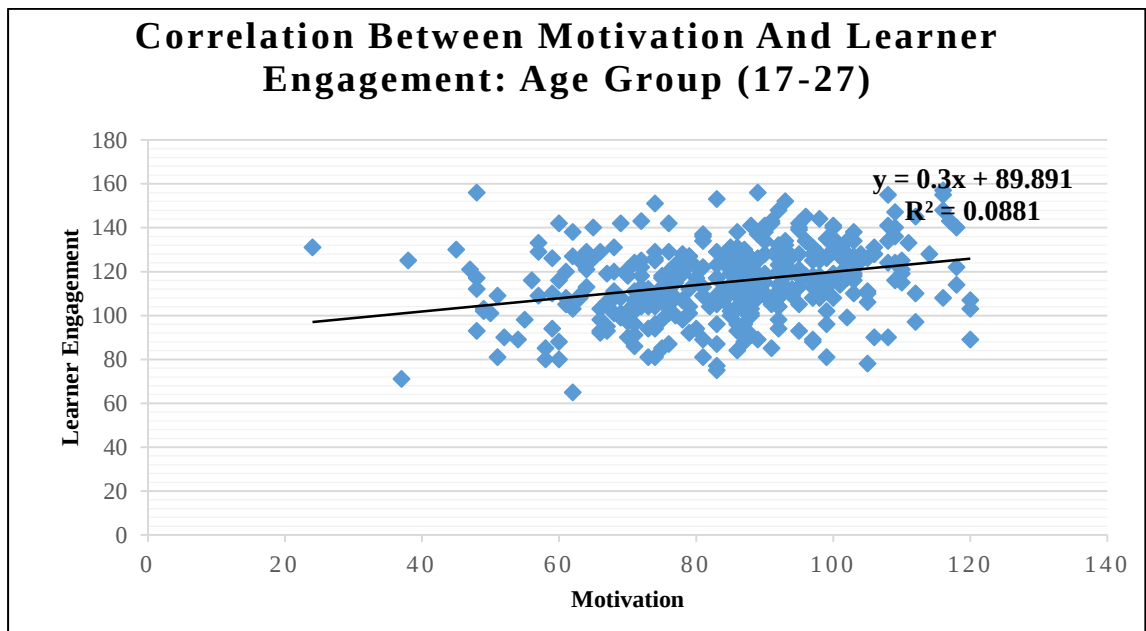


Figure 4.6.2b (iii) Correlation between Motivation and Learner Engagement: Age Group (28-38)

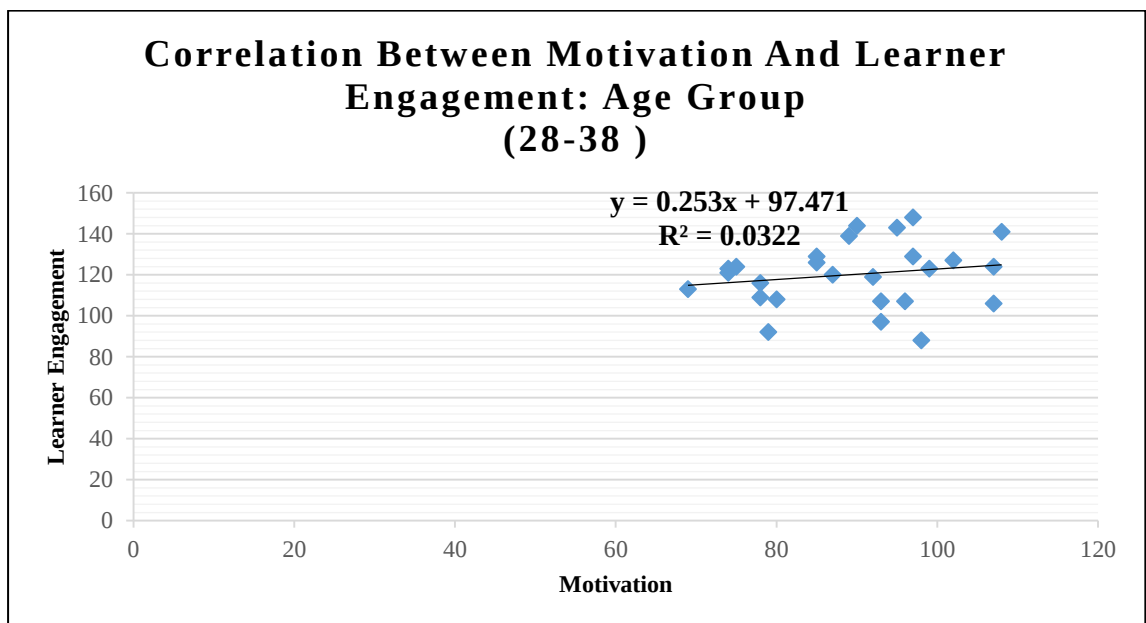


Figure 4.6.2b (iv) Correlation between Motivation and Learner Engagement: Age Group (39-49)

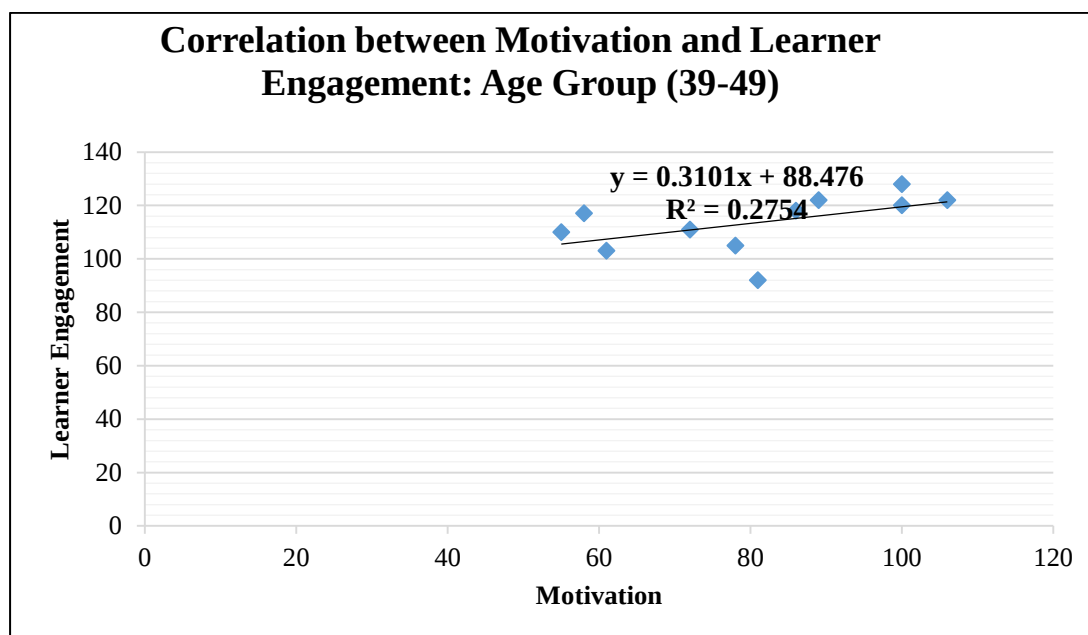


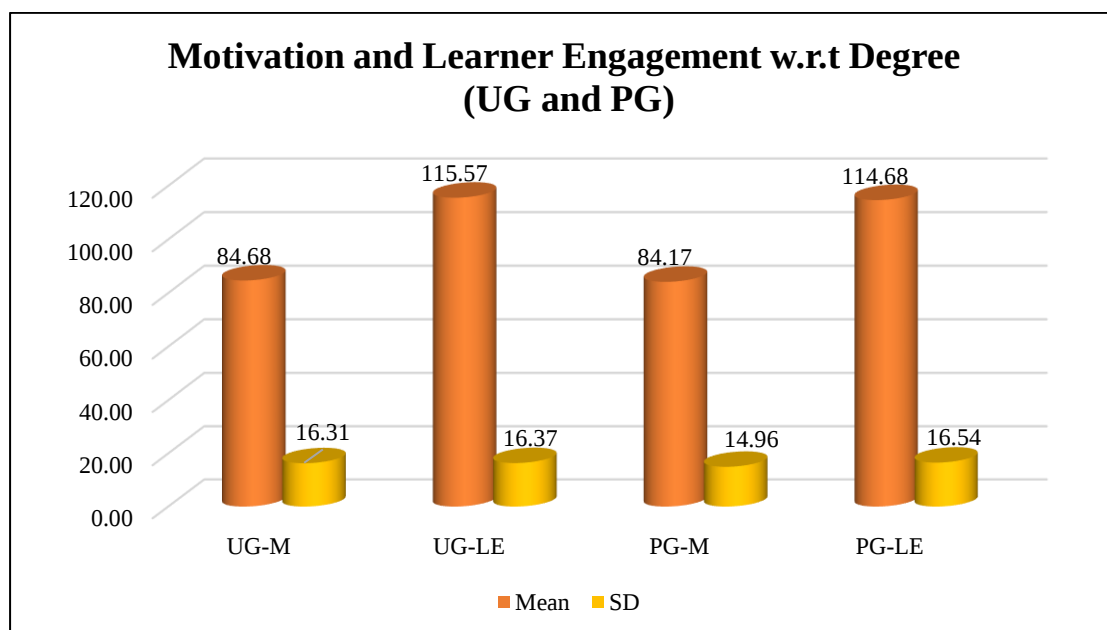
Figure 4.6.2b (ii), 4.6.2b (iii) and 4.6.2b (iv) shows the obtained value of R^2 as 0.09, 0.03 and 0.28 for the age groups (17-27), (28-38) and (39-49) respectively. The obtained value is very low and indicates that regression line does not fit the data properly i.e. the correlation was weak.

4.6.2c: Correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to Undergraduate and Postgraduate Degree

Table 4.6.2c Motivation Levels and Learner Engagement Levels: UG and PG Degree

Degree (UG/PG) Course	N	Variables	Mean	Median	SD	SE _M	Skew	Kurt
UG	376	M	84.68	86	16.31	0.84	-0.34	0.14
		LE	115.57	116	16.37	0.84	-0.06	-0.04
PG	47	M	84.17	87	14.96	2.18	-0.27	-0.54
		LE	114.68	119	16.54	2.41	-0.28	-0.33

Figure 4.6.2c (i) Motivation Levels and Learner Engagement Levels: UG and PG Degree



From Table 4.6.2c and Figure 4.6.2c (i)

- The mean value was 84.68 and the standard deviation was 16.31 of the Motivation Levels of undergraduate higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many undergraduate higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.14 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the undergraduate higher education learners.
- The mean value was 84.17 and the standard deviation was 14.96 of the Motivation Levels of postgraduate higher education learners. The value of median was 87. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many postgraduate higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.54 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the postgraduate higher education learners.
- The mean Motivation Levels score among undergraduate higher education learners was almost equal to that of the postgraduate higher education learners.

- The mean value was 115.57 and the standard deviation was 16.37 of the Learner Engagement Levels of undergraduate higher education learners. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many undergraduate higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.04 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the undergraduate higher education learners.
- The mean value was 114.68 and the standard deviation was 16.54 of the Learner Engagement Levels of postgraduate higher education learners. The value of median was 119. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many postgraduate higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.33 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the postgraduate higher education learners
- The mean Learner Engagement Levels score among undergraduate higher education learners was better than the postgraduate higher education learners.

Figure 4.6.2c (ii) Correlation between Motivation and Learner Engagement: UG Degree

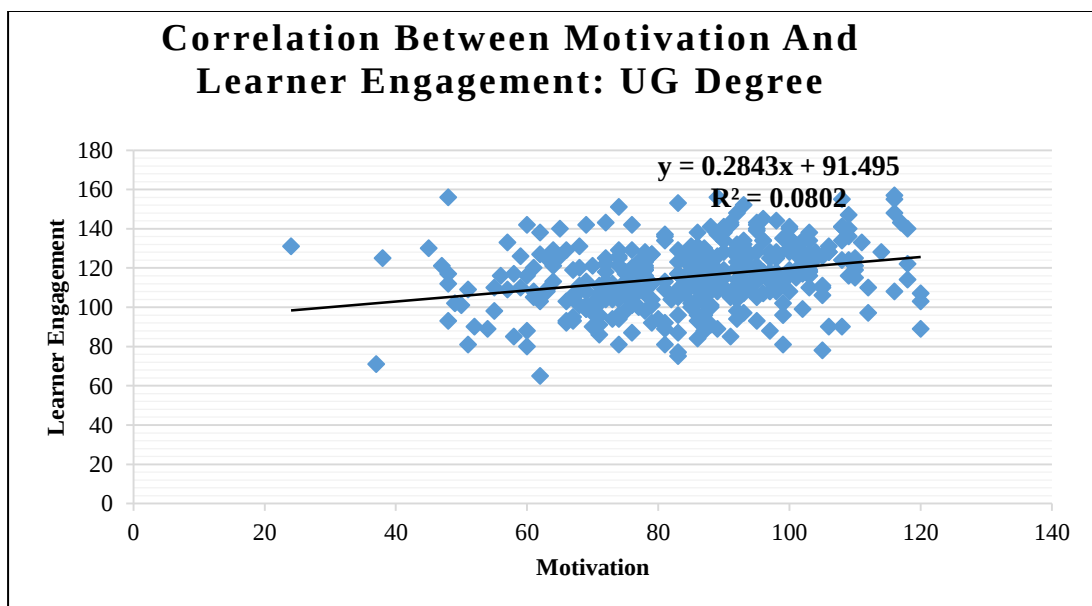


Figure 4.6.2c (iii) Correlation between Motivation and Learner Engagement: PG Degree

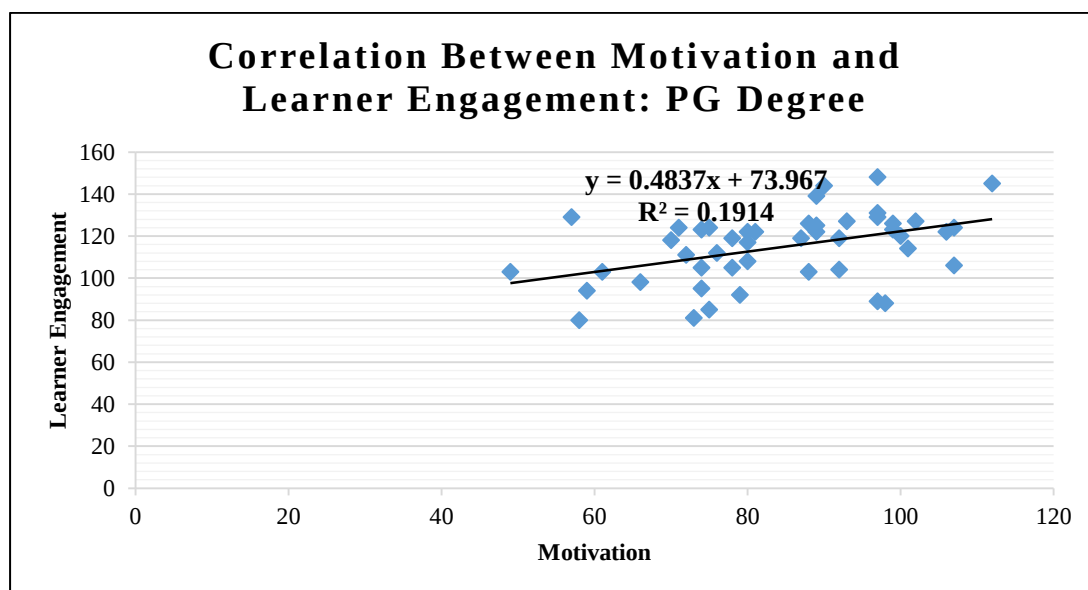


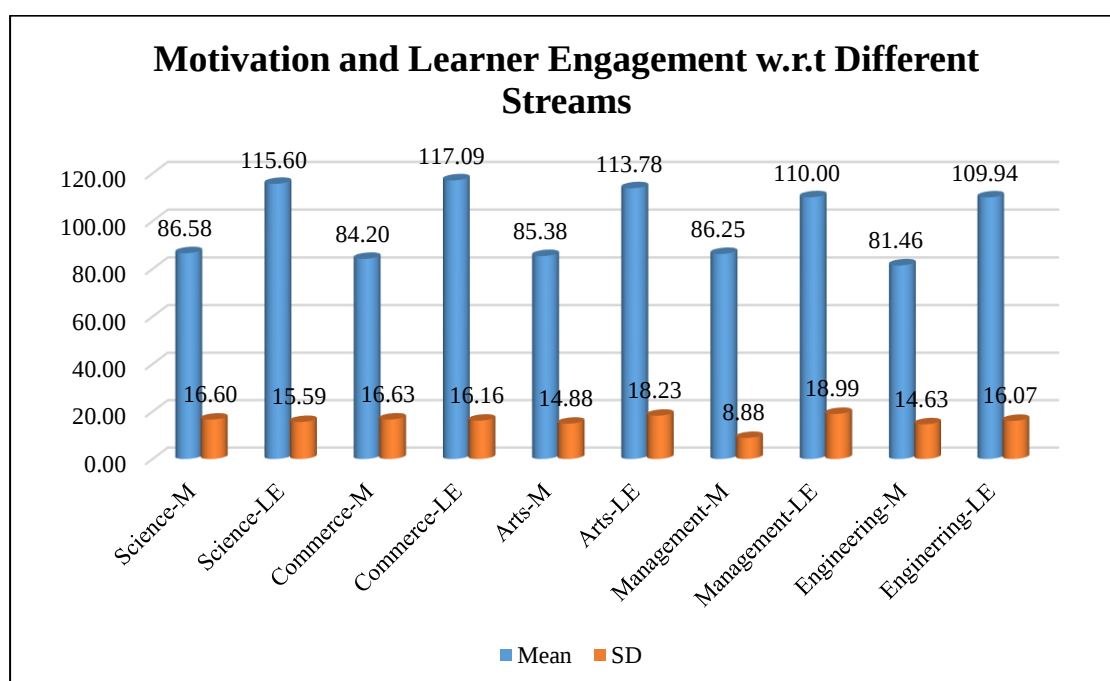
Figure 4.6.2c (ii) and Figure 4.6.2c (iii) shows the obtained value of R^2 as 0.08 and 0.19 among UG and PG higher education learners respectively. The obtained value is very low and indicates that the regression line does not fit the data properly i.e. the correlation was weak.

4.6.2d: Correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to Different Streams

Table 4.6.2d Motivation Levels and Learner Engagement Levels: Different Streams

Different Streams	N	Variables	Mean	Median	SD	SE _M	Skew	Kurt
Science	103	M	86.58	88	16.60	1.64	-0.28	-0.24
		LE	115.60	116	15.59	1.54	-0.003	0.02
Commerce	224	M	84.20	86	16.63	1.11	-0.49	0.35
		LE	117.09	119	16.16	1.08	-0.12	-0.29
Arts	40	M	85.38	86	14.88	2.35	-0.02	-1.35
		LE	113.78	114.5	18.23	2.88	-0.26	0.55
Management	8	M	86.25	84	8.88	3.14	0.33	-1.07
		LE	110.00	110.5	18.99	6.71	-0.41	-0.04
Engineering	48	M	81.46	80	14.63	2.11	0.20	0.24
		LE	109.94	112	16.07	2.32	0.32	0.81

Figure 4.6.2d (i) Motivation Levels and Learner Engagement Levels: Different Streams



From Table 4.6.2d and Figure 4.6.2d (i)

- The mean value was 86.58 and the standard deviation was 16.60 of the Motivation Levels of Science stream higher education learners. The value of median was 88. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Science stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Science stream higher education learners.
- The mean value was 84.20 and the standard deviation was 16.63 of the Motivation Levels of Commerce stream higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Commerce stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.35 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Commerce stream higher education learners.
- The mean value was 85.38 and the standard deviation was 14.88 of the Motivation Levels of Arts stream higher education learners. The value of median was 86. The

value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Arts stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -1.35 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Arts stream higher education learners.

- The mean value was 86.25 and the standard deviation was 8.88 of the Motivation Levels of Management stream higher education learners. The value of median was 84. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many Management stream higher education learners have Motivation Levels less than the average score of the group. The value of Kurtosis was -1.07 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Management stream higher education learners.
- The mean value was 81.46 and the standard deviation was 14.63 of the Motivation Levels of Engineering stream higher education learners. The value of median was 80. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many Engineering stream higher education learners have Motivation Levels less than the average score of the group. The value of Kurtosis was 0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Management stream higher education learners.
- The mean Motivation Level Scores of the higher education learners from Science was better than Management which in turn was better than Arts which in turn was better than Commerce which in turn was better than Engineering.
- The mean value was 115.60 and the standard deviation was 15.59 of the Learner Engagement Levels of Science stream higher education learners. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Science stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.02 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Science stream higher education learners.

- The mean value was 117.09 and the standard deviation was 16.16 of the Learner Engagement Levels of Commerce stream higher education learners. The value of median was 119. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Commerce stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.29 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Commerce stream higher education learners.
- The mean value was 113.78 and the standard deviation was 18.23 of the Learner Engagement Levels of Arts stream higher education learners. The value of median was 114.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Arts stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.55 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Arts stream higher education learners.
- The mean value was 110 and the standard deviation was 18.99 of the Learner Engagement Levels of Management stream higher education learners. The value of median was 110.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Management stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.04 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Management stream higher education learners.
- The mean value was 109.94 and the standard deviation was 16.07 of the Learner Engagement Levels of Engineering stream higher education learners. The value of median was 112. The value of median is more than the mean value therefore the distribution is negatively skewed. Although the value in the table showed positive value but the distribution came as negatively skewed. This indicates that many Engineering stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.81 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Engineering stream higher education learners.

- The mean Learner Engagement Level Scores of the higher education learners from Commerce was better than Science which in turn was better than Arts which in turn was better than Management which in turn was better than Engineering.

Figure 4.6.2d (ii) Correlation between Motivation Levels and Learner Engagement: Science

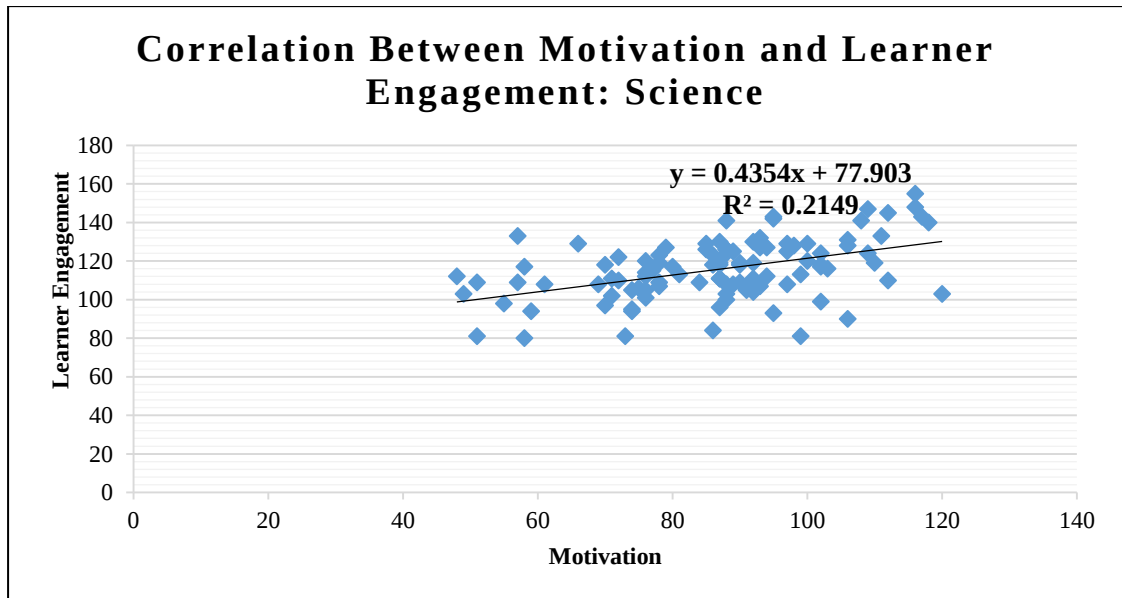


Figure 4.6.2d (iii) Correlation between Motivation and Learner Engagement: Commerce

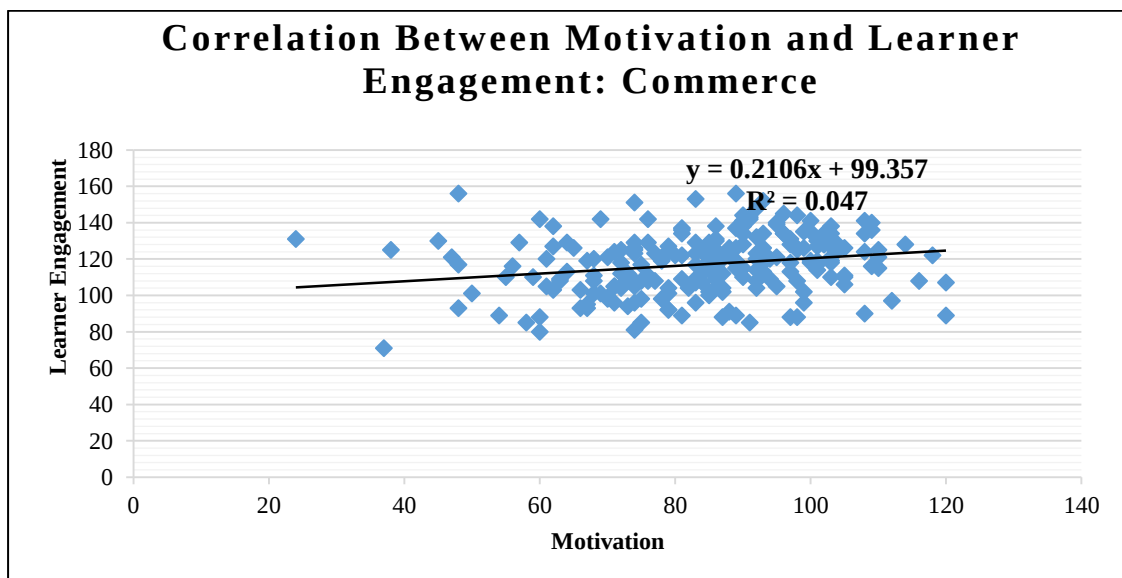


Figure 4.6.2d (iv) Correlation between Motivation and Learner Engagement: Arts

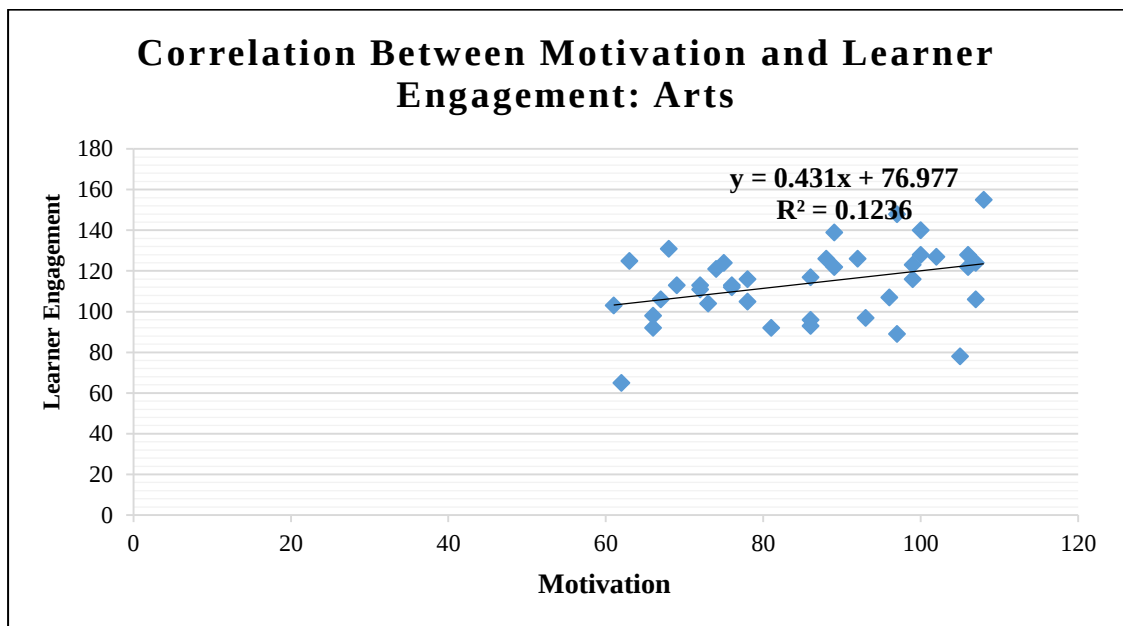


Figure 4.6.2d (v) Correlation between Motivation and Learner Engagement: Management

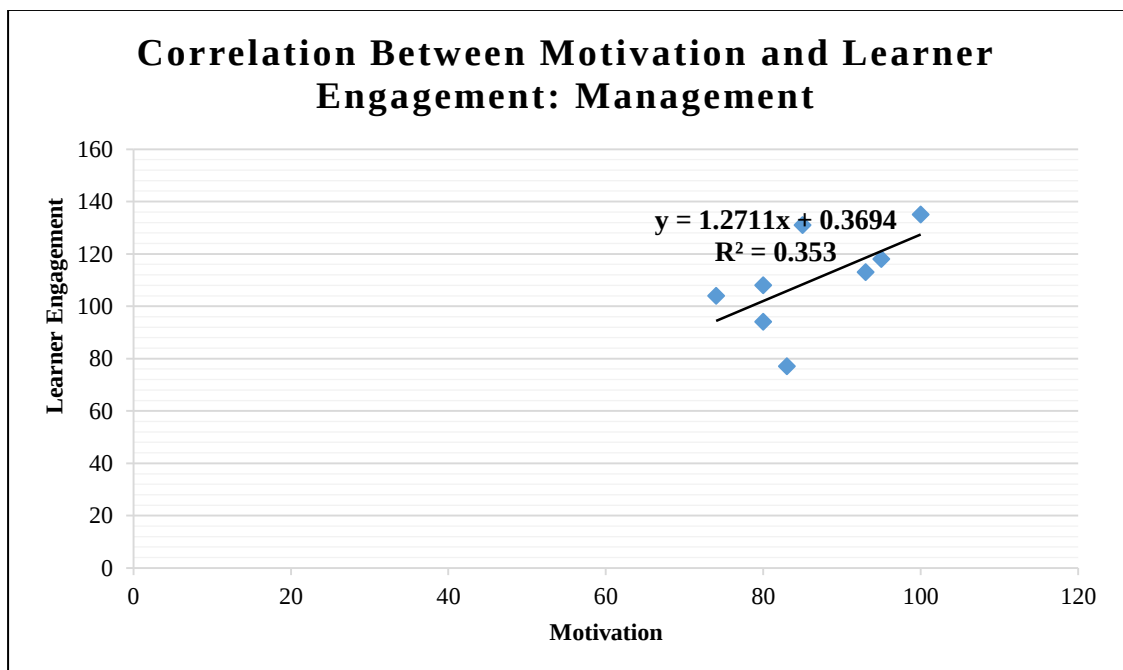


Figure 4.6.2d (vi) Correlation between Motivation and Learner Engagement: Engineering

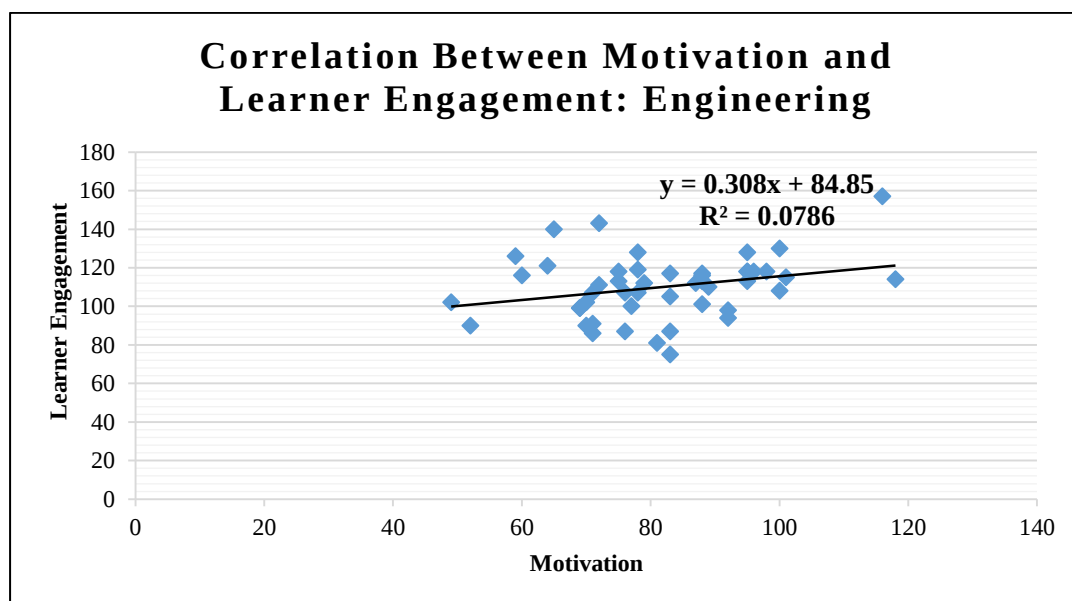


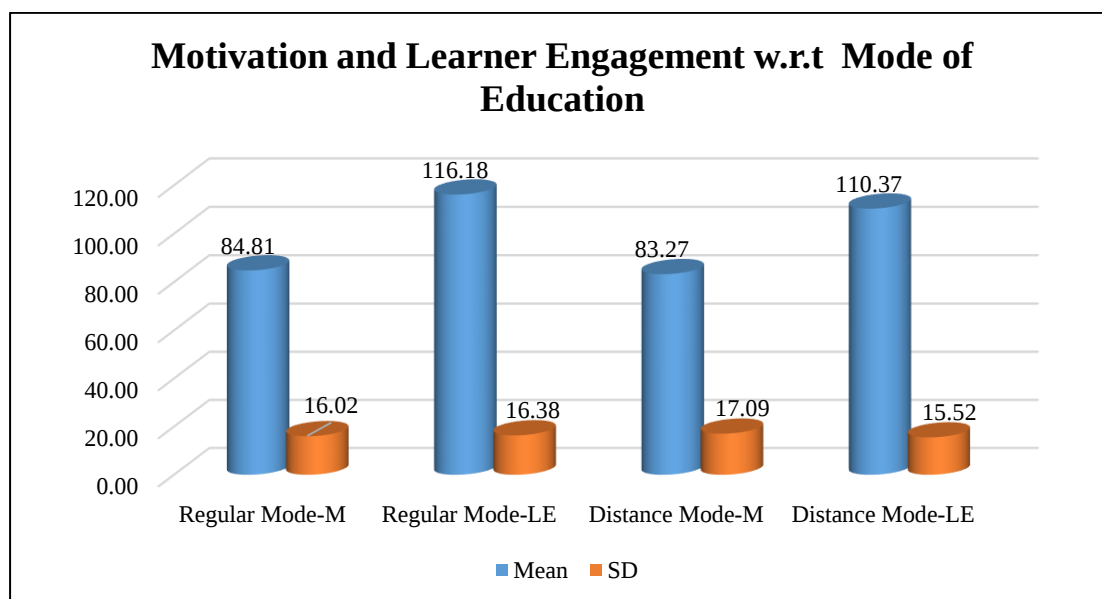
Figure 4.6.2d (ii), 4.6.2d (iii), 4.6.2d (iv), 4.6.2d (v) and 4.6.2d (vi) shows the obtained value of R^2 as 0.21, 0.05, 0.12, 0.35 and 0.08 among the higher education learners from the streams of Science, Commerce, Arts, Management and Engineering respectively. The obtained value is low and indicates that the regression line does not fit the data properly i.e. the correlation was weak

4.6.2e: Correlation between Motivation Levels and Learner Engagement Levels of higher education learners with respect to Mode of Education (Regular and Distance)

Table 4.6.2e Motivation Levels and Learner Engagement Levels: Mode of Education (Regular and Distance)

Mode of Education	N	Variables	Mean	Median	SD	SE _M	Skew	Kurt
Regular	371	M	84.81	86	16.02	0.83	-0.24	-0.21
		LE	116.18	117	16.38	0.85	-0.09	0.03
Distance	52	M	83.27	86.5	17.09	2.37	-0.90	1.78
		LE	110.37	110	15.52	2.15	-0.10	-0.94

Figure 4.6.2e (i) Motivation Levels and Learner Engagement Levels: Mode of Education (Regular and Distance)



From Table 4.6.2e and Figure 4.6.2e (i)

- The mean value was 84.81 and the standard deviation was 16.02 of the Motivation Levels of regular mode of higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many regular mode higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.21 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the regular mode of higher education learners.
- The mean value was 83.27 and the standard deviation was 17.09 of the Motivation Levels of distance mode of higher education learners. The value of median was 86.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many distance mode higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 1.78 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the distance mode of higher education learners.
- The mean Motivation Levels score among regular mode higher education learners was higher i.e. better than the distance mode higher education learners.

- The mean value was 116.18 and the standard deviation was 16.38 of the Learner Engagement Levels of regular mode of higher education learners. The value of median was 117. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many regular mode higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.03 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the regular mode of higher education learners.
- The mean value was 110.37 and the standard deviation was 15.52 of the Learner Engagement Levels of distance mode of higher education learners. The value of median was 110. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many distance mode higher education learners have Learner Engagement Levels less than the average score of the group. The value of Kurtosis was -0.94 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the distance mode of higher education learners.
- The mean Learner Engagement Levels score among regular mode higher education learners was higher i.e. better than the distance mode higher education learners

Figure 4.6.2e (ii) Correlation between Motivation and Learner Engagement: Regular

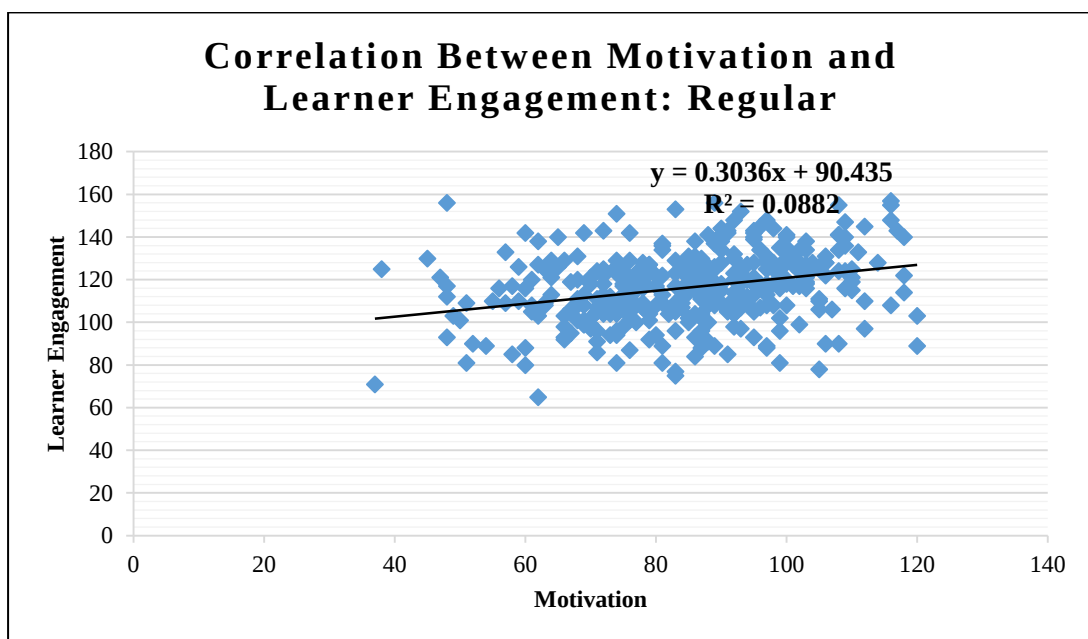


Figure 4.6.2e (iii) Correlation between Motivation and Learner Engagement: Distance

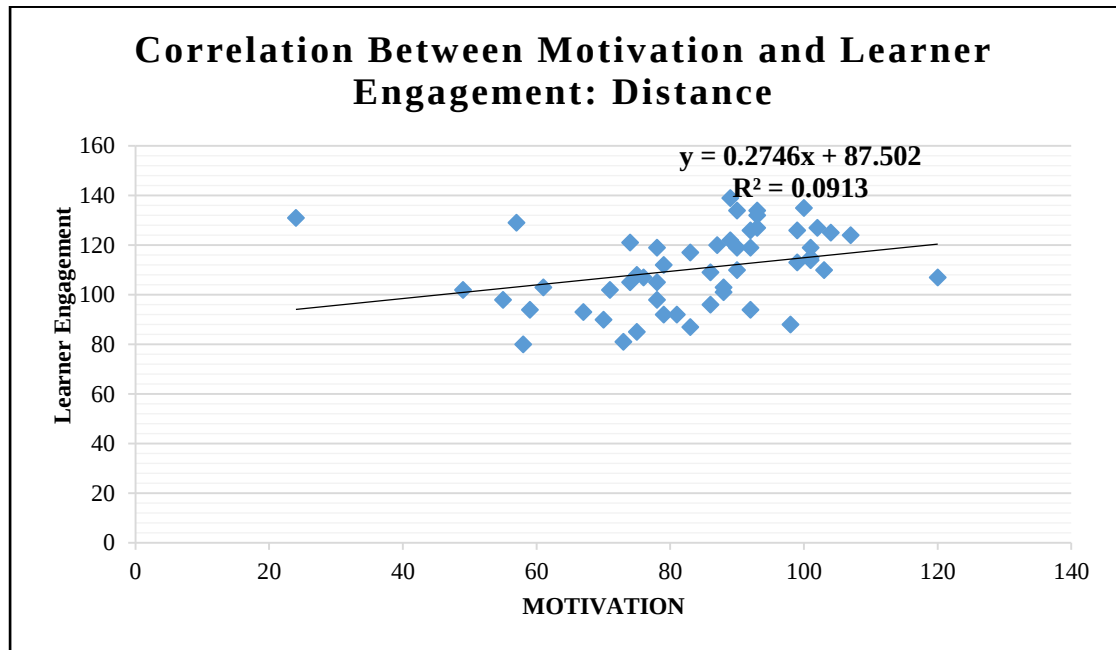


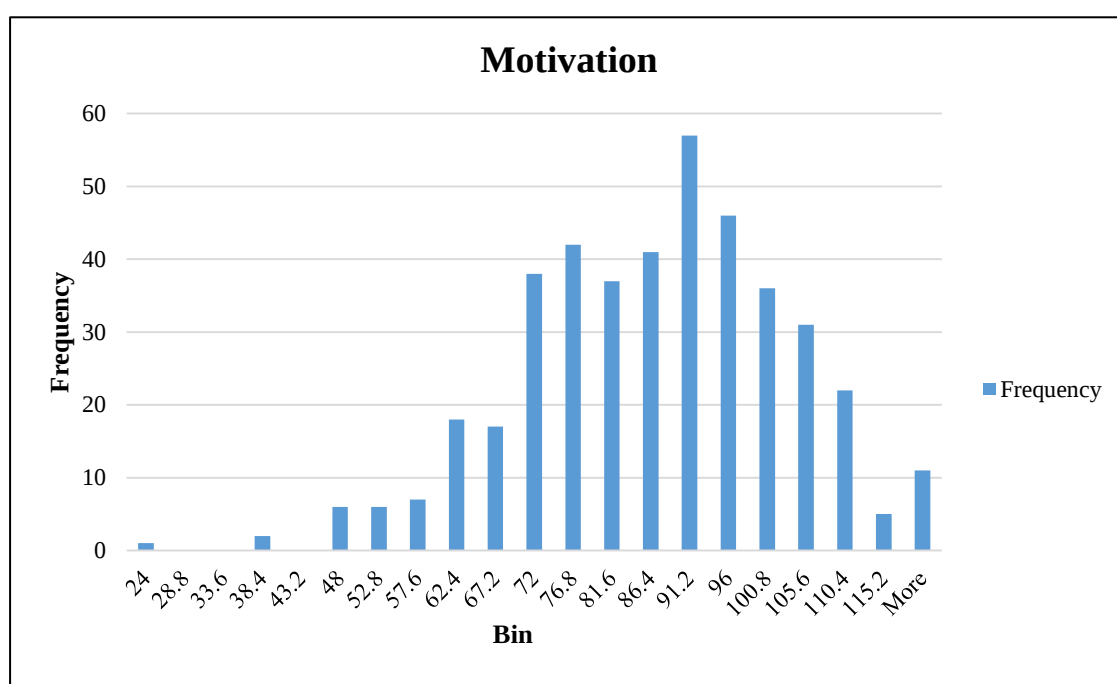
Figure 4.6.2e (ii) and Figure 4.6.2e (iii) shows the obtained value of R^2 as 0.09 and 0.09 among regular mode and distance mode of higher education learners respectively. The obtained value is very low and indicates that the regression line does not fit the data properly i.e. the correlation was weak.

4.6.3 Motivation Levels of Higher Education Learners

Table 4.6.3 (i) Descriptive summary of the Motivation Levels of higher education learners

Variables	N	Mean	Median	SD	SE _M	Skew	Kurt
M	423	84.62	86	16.15	0.79	-0.33	0.08

Figure 4.6.3 (i) Histogram: Normal Distribution Curve for Motivation Levels



From Table 4.6.3 (i) and Figure 4.6.3 (i) it can be seen that the data obtained for studying the Motivation Levels in higher education learners was normally distributed. The mean value of the Motivation Levels of higher education learners was 84.62 and standard deviation was 16.15. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners who have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.08 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.

Table 4.6.3 (ii) Motivation Levels (Percentage Analysis)

Range of scores with level	Total samples	%
High (97-120)	105	24.82
Moderate (48-96)	313	74.00
Low (24-47)	5	1.18
Total	423	100

Figure 4.6.3 (ii) Motivation Levels (Percentage Analysis)

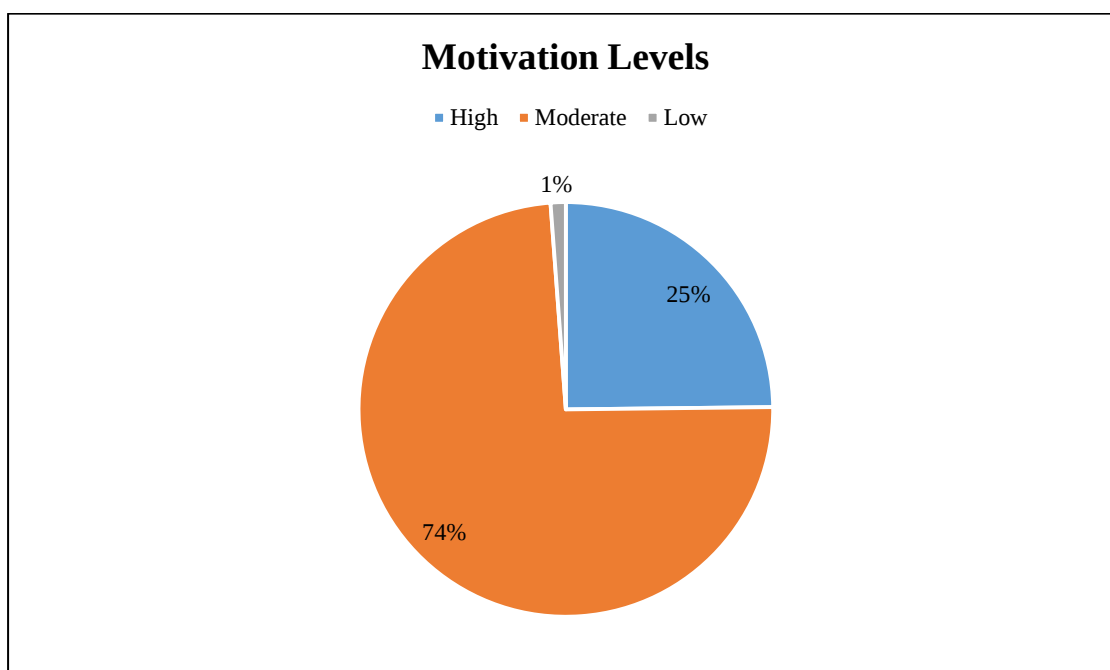


Table 4.6.3(ii) and Figure 4.6.3(ii) depicts the range of scores of Motivation Levels of the total sample of higher education learners. From the table it can be seen that:

- 24.82% of higher education learners have a high Motivation Levels.
- 74% of higher education learners have moderate Motivation Levels.
- 1.18% of higher education learners have low Motivation Levels.
- Maximum numbers of higher education learners have moderate Motivation Levels.

4.6.3a Motivation Levels in higher education learners with respect to gender

Table 4.6.3a Motivation Levels: Gender

Gender	N	Mean	Median	SD	SE _M	Skew	Kurt
Female	277	85.68	87	15.83	0.95	-0.44	0.01
Male	146	82.61	83	16.59	1.37	-0.12	0.37

Figure 4.6.3a Motivation Levels: Gender

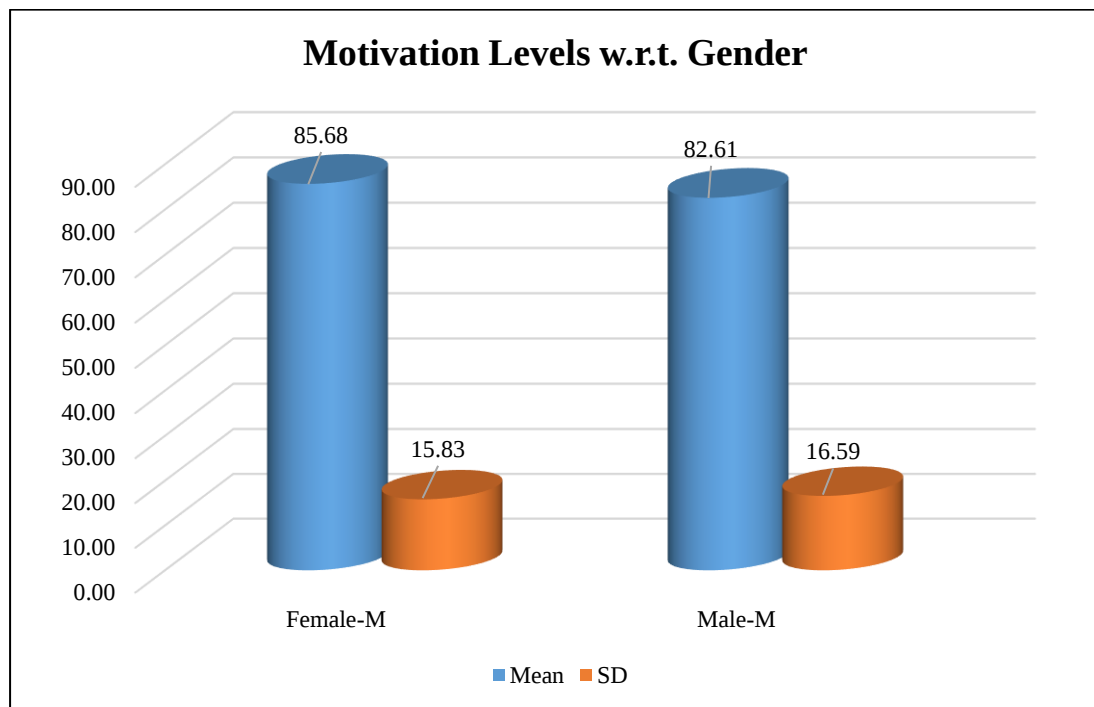


Table 4.6.3a and Figure 4.6.3a depicts the mean value and standard deviation of the Motivation Levels of higher education learners with respect to their Gender

- The mean value was 85.68 and the standard deviation was 15.83 of the Motivation Levels of female higher education learners. The value of median was 87. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many female higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.01 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the female higher education learners.
- The mean value was 82.61 and the standard deviation was 16.59 of the Motivation Levels of male higher education learners. The value of median was 83. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many male higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.37 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the male higher education learners.
- The mean Motivation Levels score among female higher education learners was higher i.e. better than the male higher education learners.

4.6.3b Motivation Levels in higher education learners with respect to age groups

Table 4.6.3b Motivation Levels: Age Groups

Age Group	N	Mean	Median	SD	SE _M	Skew	Kurt
17-27	386	84.41	86	16.35	0.83	-0.31	0.08
28-38	26	89.5	91	11.16	2.19	-0.08	-1.0
39-49	11	80.55	81	17.69	5.33	-0.09	-1.27

Figure 4.6.3b Motivation Levels: Age Groups

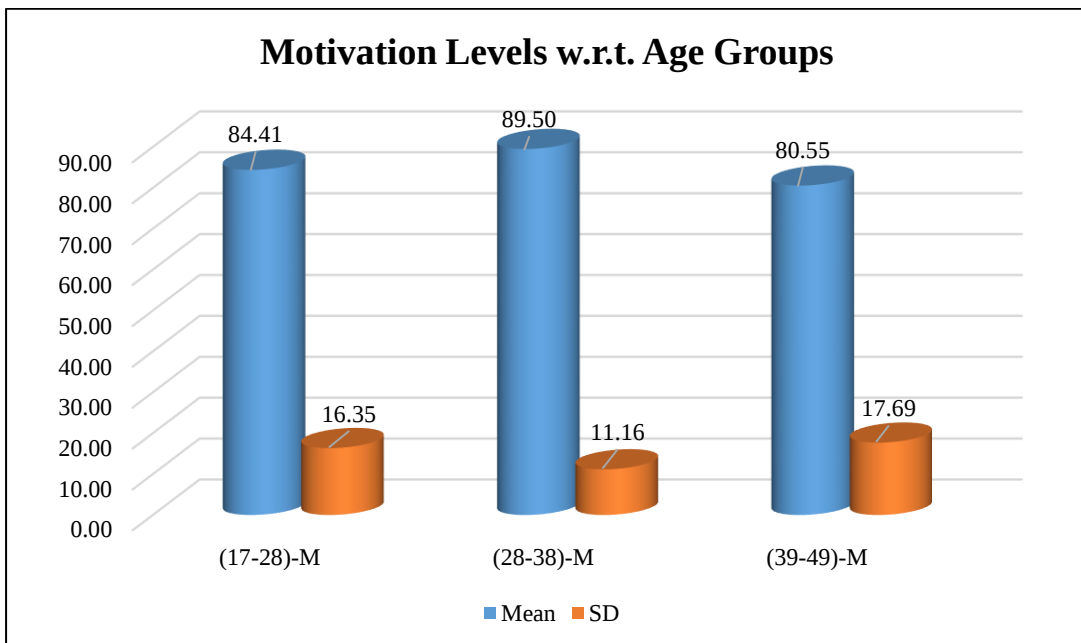


Table 4.6.3b and Figure 4.6.3b depicts the mean value and standard deviation of the Motivation Levels of higher education learners with respect to Age Groups

- The mean value of the Motivation Levels of higher education learners for the age group (17-27) was 84.41 and standard deviation was 16.35. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (17-27) who have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.08 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.

- The mean value of the Motivation Levels of higher education learners for the age group (28-38) was 89.5 and standard deviation was 11.16. The value of median was 91. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (28-38) who have Motivation Levels higher than the average score of the group. The value of Kurtosis was -1.0 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.
- The mean value of the Motivation Levels of higher education learners for the age group (39-49) was 80.55 and standard deviation was 17.69. The value of median was 81. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (39-49) who have Motivation Levels higher than the average score of the group. The value of Kurtosis was -1.27 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.
- The mean Motivation Levels score for higher education learners from age group (28-38) was better than those from age group (17-27) which in turn was better than those from age group (39-49).

4.6.3c Motivation Levels in higher education learners with respect to Undergraduate and Postgraduate Degree

Table 4.6.3c Motivation Levels: UG and PG Degree

Degree (UG/PG) Course	N	Mean	Median	SD	SE_M	Skew	Kurt
UG	376	84.68	86	16.31	0.84	-0.34	0.14
PG	47	84.17	87	14.96	2.18	-0.27	-0.54

Figure 4.6.3c Motivation Levels: UG and PG Degree

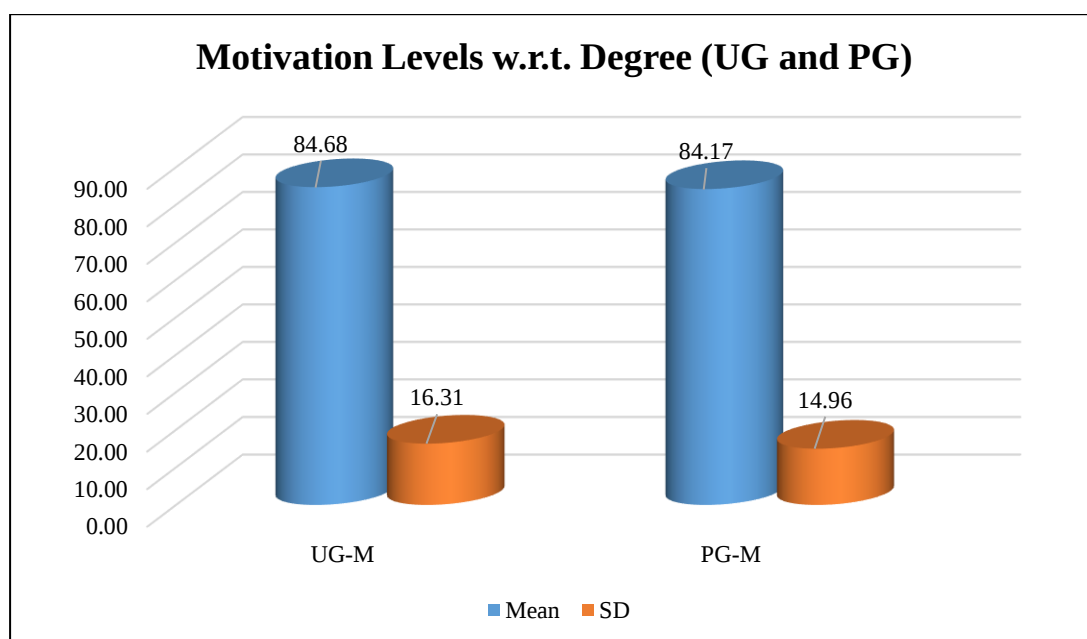


Table 4.6.3c and Figure 4.6.3c depicts the mean value and standard deviation of the Motivation Levels of higher education learners with respect to Degree (UG and PG) Course

- The mean value was 84.68 and the standard deviation was 16.31 of the Motivation Levels of undergraduate higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many undergraduate higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.14 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the undergraduate higher education learners.
- The mean value was 84.17 and the standard deviation was 14.96 of the Motivation Levels of postgraduate higher education learners. The value of median was 87. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many postgraduate higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.54 which is more than the normal

distribution value 0.263. Thus, the distribution was Platykurtic among the postgraduate higher education learners.

- The mean Motivation Levels score among undergraduate higher education learners was almost equal to that of the postgraduate higher education learners.

4.6.3d Motivation Levels in higher education learners with respect to Different Streams

Table 4.6.3d Motivation Levels: Different Streams

Different Streams	N	Mean	Median	SD	SE _M	Skew	Kurt
Science	103	86.58	88	16.60	1.64	-0.28	-0.24
Commerce	224	84.20	86	16.63	1.11	-0.49	0.35
Arts	40	85.38	86	14.88	2.35	-0.02	-1.35
Management	8	86.25	84	8.88	3.14	0.33	-1.07
Engineering	48	81.46	80	14.63	2.11	0.20	0.24

Figure 4.6.3d Motivation Levels: Different Streams

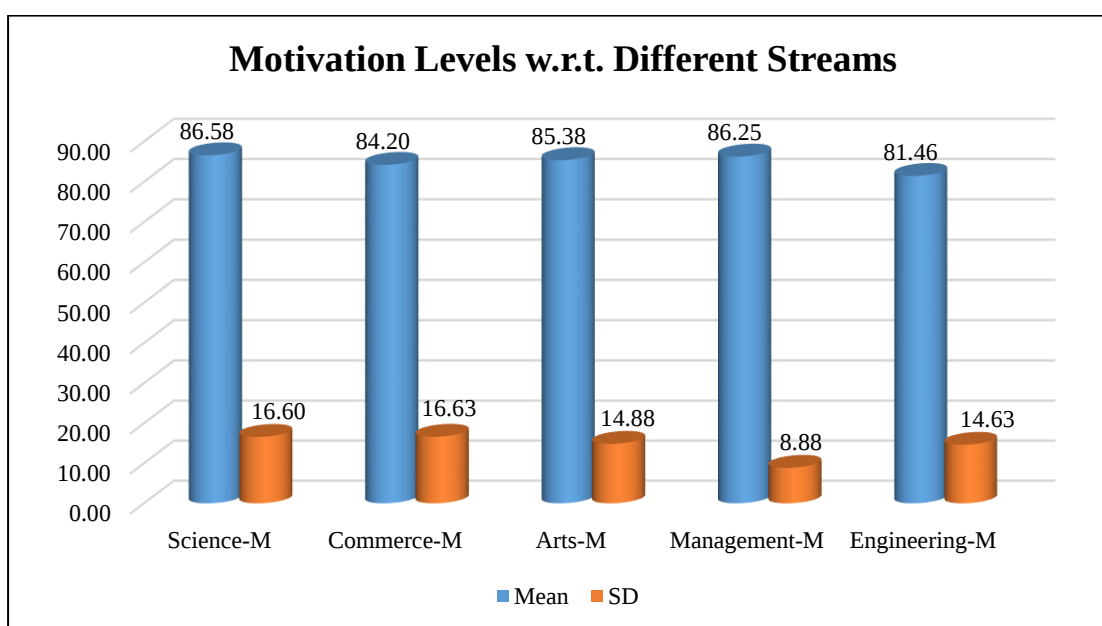


Table 4.6.3d and Figure 4.6.3d depicts the mean value and standard deviation of the Motivation Levels of higher education learners with respect to Different Streams

- The mean value was 86.58 and the standard deviation was 16.60 of the Motivation Levels of Science stream higher education learners. The value of median was 88. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Science stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Science stream higher education learners.
- The mean value was 84.20 and the standard deviation was 16.63 of the Motivation Levels of Commerce stream higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Commerce stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 0.35 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Commerce stream higher education learners.
- The mean value was 85.38 and the standard deviation was 14.88 of the Motivation Levels of Arts stream higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Arts stream higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -1.35 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Arts stream higher education learners.
- The mean value was 86.25 and the standard deviation was 8.88 of the Motivation Levels of Management stream higher education learners. The value of median was 84. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many Management stream higher education learners have Motivation Levels less than the average score of the group. The value of Kurtosis was -1.07 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Management stream higher education learners.

- The mean value was 81.46 and the standard deviation was 14.63 of the Motivation Levels of Engineering stream higher education learners. The value of median was 80. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many Engineering stream higher education learners have Motivation Levels less than the average score of the group. The value of Kurtosis was 0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Management stream higher education learners.
- The mean Motivation Level Scores of the higher education learners from Science was better than Management which in turn was better than Arts which in turn was better than Commerce which in turn was better than Engineering.

4.6.3e Motivation Levels in higher education learners with respect to Mode of Education (Regular and Distance)

Table 4.6.3e Motivation Levels: Mode of Education (Regular and Distance)

Mode of Education	N	Mean	Median	SD	SE _M	Skew	Kurt
Regular	371	84.81	86	16.02	0.83	-0.24	-0.21
Distance	52	83.27	86.5	17.09	2.37	-0.90	1.78

Figure 4.6.3e Motivation Levels: Mode of Education (Regular and Distance)

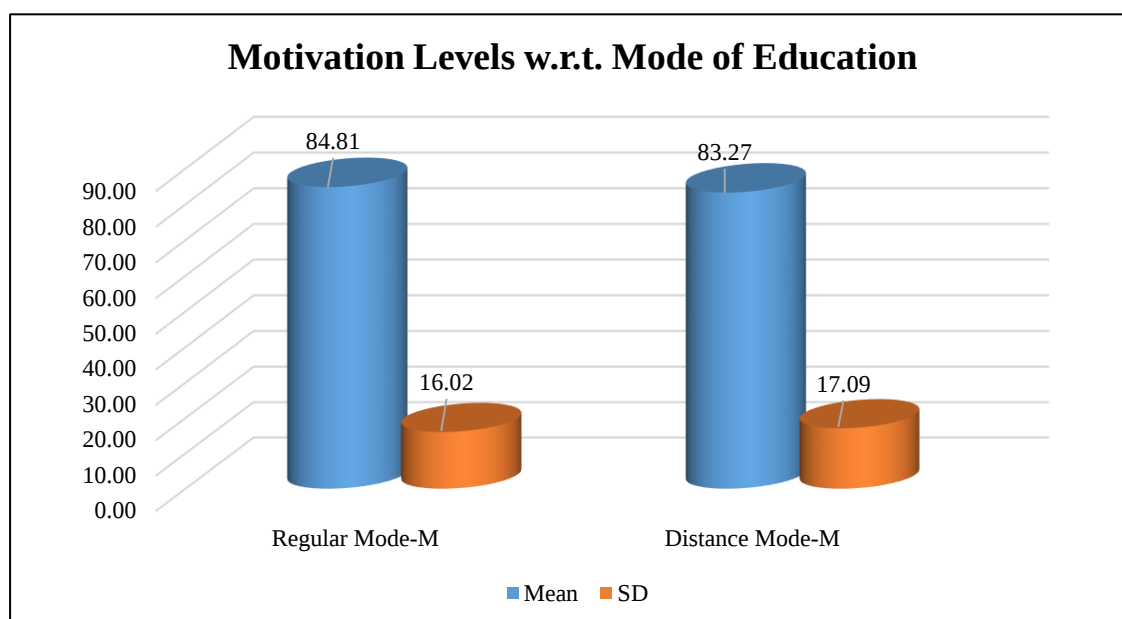


Table 4.6.3e and Figure 4.6.3e depicts the mean value and standard deviation of the Motivation Levels of higher education learners with respect to Mode of Education

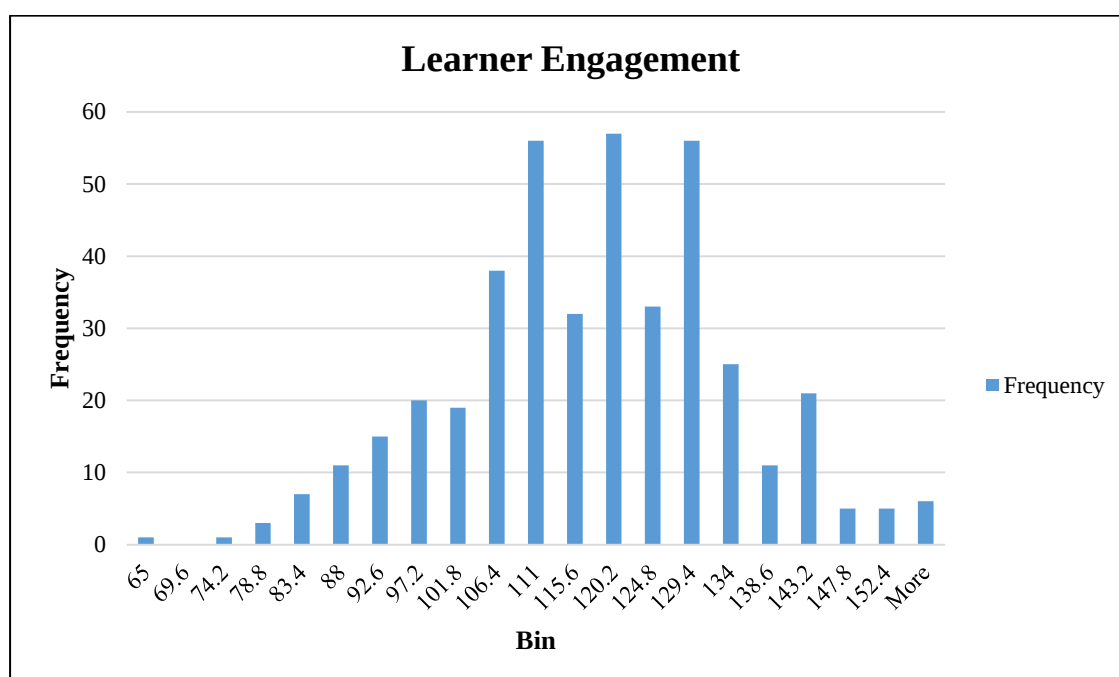
- The mean value was 84.81 and the standard deviation was 16.02 of the Motivation Levels of regular mode of higher education learners. The value of median was 86. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many regular mode higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was -0.21 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the regular mode of higher education learners.
- The mean value was 83.27 and the standard deviation was 17.09 of the Motivation Levels of distance mode of higher education learners. The value of median was 86.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many distance mode higher education learners have Motivation Levels higher than the average score of the group. The value of Kurtosis was 1.78 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the distance mode of higher education learners.
- The mean Motivation Levels score among regular mode higher education learners was higher i.e. better than the distance mode higher education learners.

4.6.4 Learner Engagement Levels of Higher Education Learners

Table 4.6.4 (i) Descriptive summary of the Learner Engagement Levels of higher education learners

Variables	N	Mean	Median	SD	SE _M	Skew	Kurt
LE	423	115.47	116	16.37	0.80	-0.08	-0.07

Figure 4.6.4 (i) Histogram: Normal Distribution Curve for Learner Engagement Levels



From Table 4.6.4 (i) and Figure 4.6.4 (i) it can be seen that the data obtained for studying the Learner Engagement Levels in higher education learners was normally distributed. The mean value of the Learner Engagement of higher education learners was 115.47 and standard deviation was 16.37. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.07 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.

Table 4.6.4 (ii) Learner Engagement (Percentage Analysis)

Range of scores with levels	Total samples	%
High (129-160)	83	19.62
Moderate (64-128)	340	80.38
Low (32-63)	0	0
Total	423	100

Figure 4.6.4 (ii) Learner Engagement (Percentage Analysis)

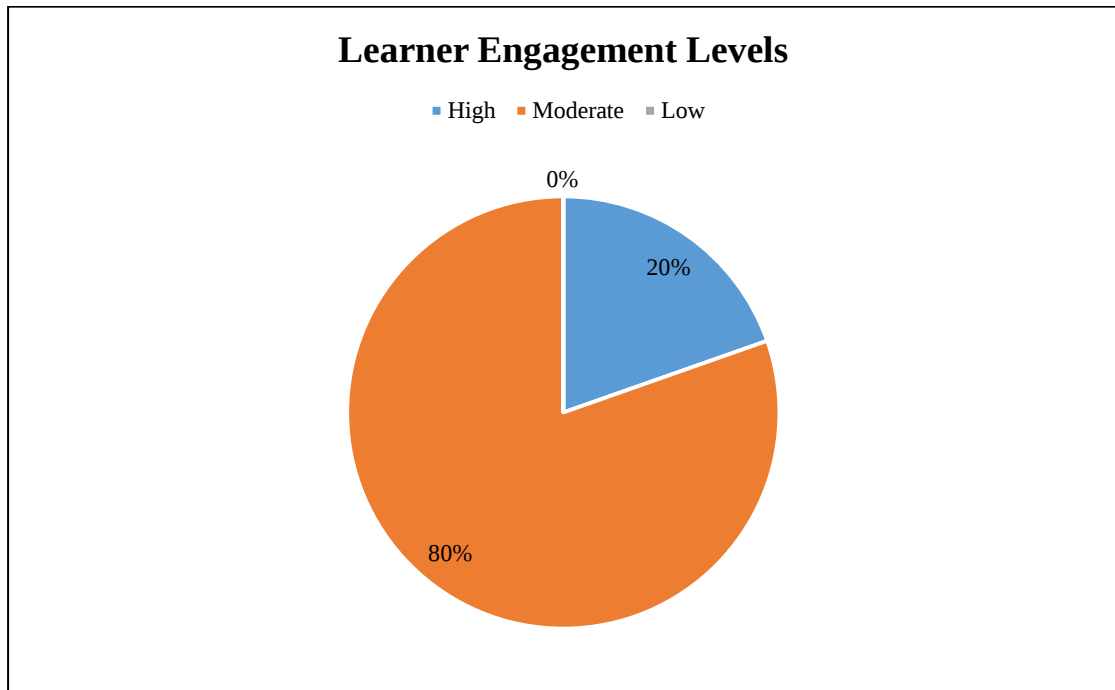


Table 4.6.4 (ii) and Figure 4.6.4 (ii) depicts the range of scores of Learner Engagement Levels of the total sample of higher education learners. From the table it can be seen that:

- 19.62% of higher education learners have a high Learner Engagement Levels.
- 80.38% of higher education learners have moderate Learner Engagement Levels.
- 0% of higher education learners have low Learner Engagement Levels.
- Maximum numbers of higher education learners have moderate Learner Engagement Levels.

4.6.4a Learner Engagement levels in higher education learners with respect to Gender

Table 4.6.4a Learner Engagement: Gender

Gender	N	Mean	Median	SD	SE _M	Skew	Kurt
Female	277	117.32	118	16.21	0.97	-0.17	-0.10
Male	146	111.95	111	16.15	1.34	0.09	0.26

Figure 4.6.4a Learner Engagement Levels: Gender

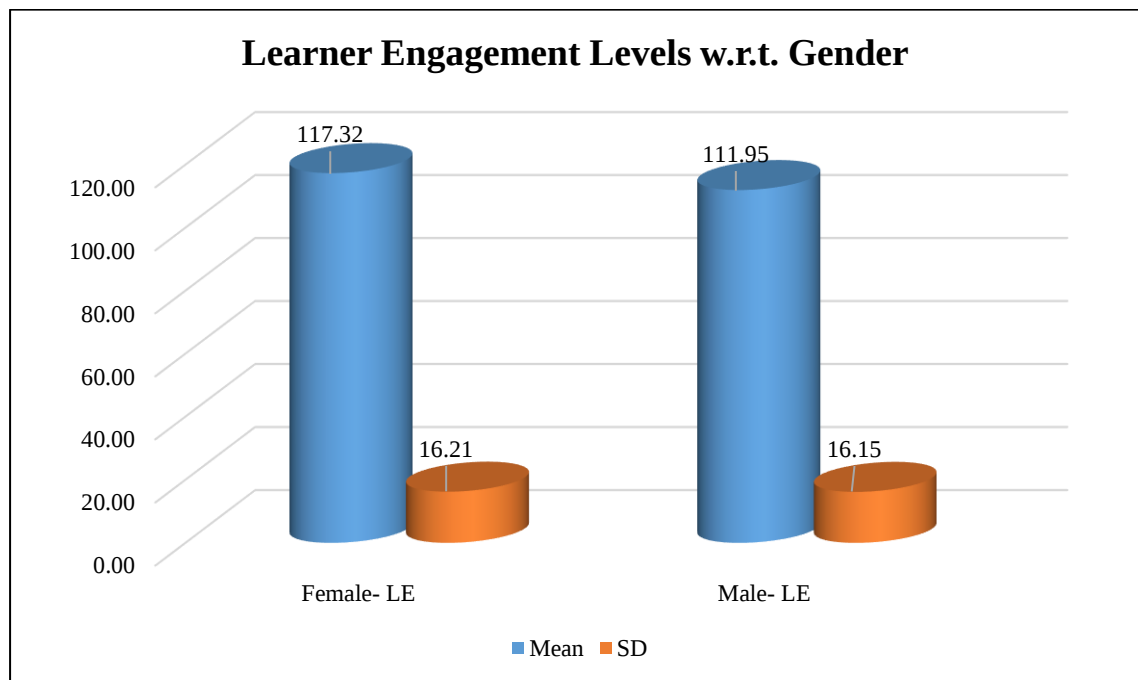


Table 4.6.4a and Figure 4.6.4a depicts the mean value and standard deviation of the Learner Engagement Levels of higher education learners with respect to their Gender

- The mean value was 117.32 and the standard deviation was 16.21 of the Learner Engagement Levels of female higher education learners. The value of median was 118. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many female higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.10 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the female higher education learners.
- The mean value was 111.95 and the standard deviation was 16.15 of the Learner Engagement Levels of male higher education learners. The value of median was 111. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many male higher education learners have Learner Engagement Levels less than the average score of the group. The value of Kurtosis was 0.26 which is almost equal to the normal distribution value 0.263. Thus, the distribution was Mesokurtic among the male higher education learners.
- The mean Learner Engagement Levels score among female higher education learners was better than the male higher education learners.

4.6.4b Learner Engagement levels in higher education learners with respect to Age Groups

Table 4.6.4b Learner Engagement Levels: Age Groups

Age Group	N	Mean	Median	SD	SE _M	Skew	Kurt
17-27	386	115.21	116	16.53	0.84	-0.07	-0.08
28-38	26	120.12	122	15.74	3.09	-0.15	-0.37
39-49	11	113.45	117	10.45	3.15	-0.74	0.24

Figure 4.6.4b Learner Engagement Levels: Age Groups

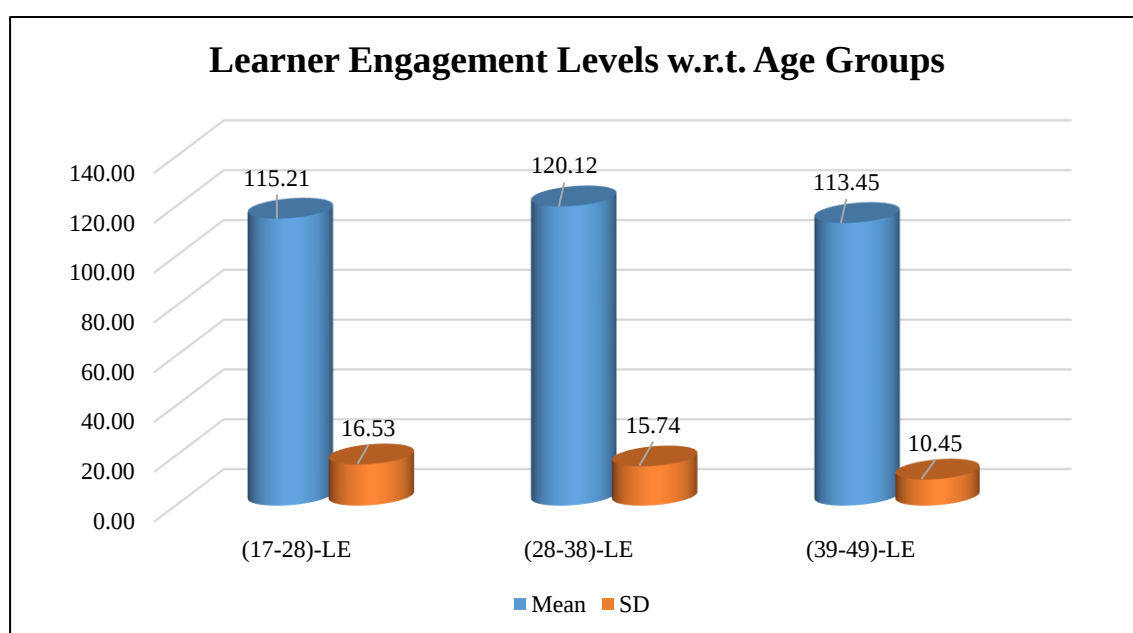


Table 4.6.4b and Figure 4.6.4b depicts the mean value and standard deviation of the Learner Engagement Levels of higher education learners with respect to Age Groups

- The mean value of the Learner Engagement Levels of higher education learners for the age group (17-27) was 115.21, and standard deviation was 16.53. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (17-27) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.08

which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.

- The mean value of the Learner Engagement Levels of higher education learners for the age group (28-38) was 120.12 and standard deviation was 15.74. The value of median was 122. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (28-38) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.37 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic in nature.
- The mean value of the Learner Engagement Levels of higher education learners for the age group (39-49) was 113.45 and standard deviation was 10.45. The value of median was 117. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that there are many higher education learners from the age group (39-49) who have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.24 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic in nature.
- The mean Learner Engagement Levels score for higher education learners from age group (28-38) was better than those from age group (17-27) which in turn was better than those from age group (39-49).

4.6.4c Learner Engagement Levels in higher education learners with respect to Undergraduate and Postgraduate Degree

Table 4.6.4c Learner Engagement Levels: UG and PG Degree

Degree (UG/PG) Course	N	Mean	Median	SD	SE_M	Skew	Kurt
UG	376	115.57	116	16.37	0.84	-0.06	-0.04
PG	47	114.68	119	16.54	2.41	-0.28	-0.33

Figure 4.6.4c Learner Engagement Levels: UG and PG Degree

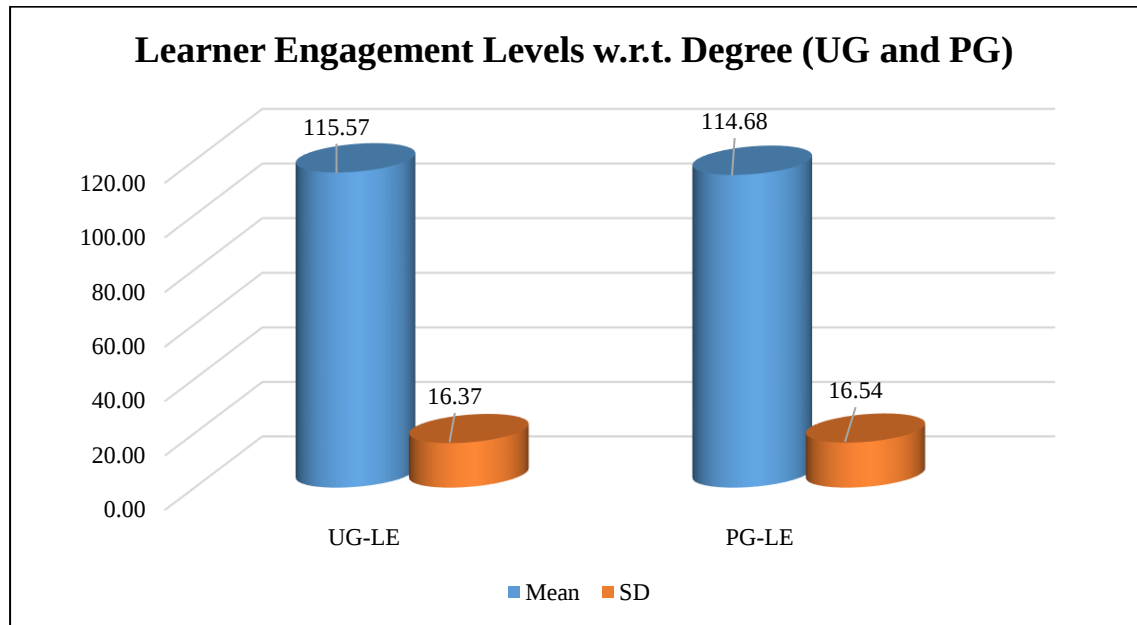


Table 4.6.4c and Figure 4.6.4c depicts the mean value and standard deviation of the Learner Engagement Levels of higher education learners with respect to Degree (UG and PG) Course

- The mean value was 115.57 and the standard deviation was 16.37 of the Learner Engagement Levels of undergraduate higher education learners. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many undergraduate higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.04 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the undergraduate higher education learners.
- The mean value was 114.68 and the standard deviation was 16.54 of the Learner Engagement Levels of postgraduate higher education learners. The value of median was 119. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many postgraduate higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.33 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the postgraduate higher education learners.

- The mean Learner Engagement Levels score among undergraduate higher education learners was better than the postgraduate higher education learners.

4.6.4d Learner Engagement Levels in higher education learners with respect to Different Streams

Table 4.6.4d Learner Engagement Levels: Different Streams

Different Streams	N	Mean	Median	SD	SE _M	Skew	Kurt
Science	103	115.60	116	15.59	1.54	-0.003	0.02
Commerce	224	117.09	119	16.16	1.08	-0.12	-0.29
Arts	40	113.78	114.5	18.23	2.88	-0.26	0.55
Management	8	110.00	110.5	18.99	6.71	-0.41	-0.04
Engineering	48	109.94	112	16.07	2.32	0.32	0.81

Figure 4.6.4d Learner Engagement Levels: Different Streams

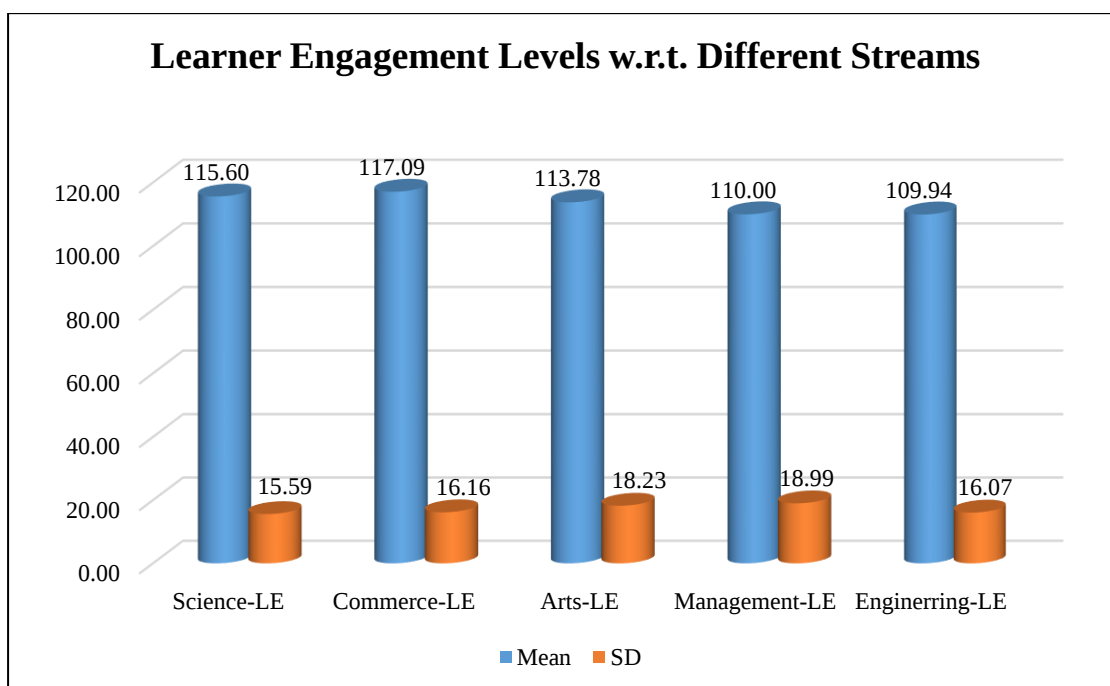


Table 4.6.4d and Figure 4.6.4d depicts the mean value and standard deviation of the Learner Engagement Levels of higher education learners with respect to Different Streams

- The mean value was 115.60 and the standard deviation was 15.59 of the Learner Engagement Levels of Science stream higher education learners. The value of median was 116. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Science stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.02 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Science stream higher education learners.
- The mean value was 117.09 and the standard deviation was 16.16 of the Learner Engagement Levels of Commerce stream higher education learners. The value of median was 119. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Commerce stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.29 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Commerce stream higher education learners.
- The mean value was 113.78 and the standard deviation was 18.23 of the Learner Engagement Levels of Arts stream higher education learners. The value of median was 114.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Arts stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.55 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Arts stream higher education learners.
- The mean value was 110 and the standard deviation was 18.99 of the Learner Engagement Levels of Management stream higher education learners. The value of median was 110.5. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many Management stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was -0.04 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the Management stream higher education learners.

- The mean value was 109.94 and the standard deviation was 16.07 of the Learner Engagement Levels of Engineering stream higher education learners. The value of median was 112. The value of median is more than the mean value therefore the distribution is negatively skewed. Although the value in the table showed positive value but the distribution came as negatively skewed. This indicates that many Engineering stream higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.81 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the Engineering stream higher education learners.
- The mean Learner Engagement Level Scores of the higher education learners from Commerce was better than Science which in turn was better than Arts which in turn was better than Management which in turn was better than Engineering.

4.6.4e Learner Engagement Levels in higher education learners with respect to Mode of Education (Regular and Distance)

Table 4.6.4e Learner Engagement Levels: Mode of Education (Regular and Distance)

Mode of Education	N	Mean	Median	SD	SE _M	Skew	Kurt
Regular	371	116.18	117	16.38	0.85	-0.09	0.03
Distance	52	110.37	110	15.52	2.15	-0.10	-0.94

Figure 4.6.4e Learner Engagement Levels: Mode of Education (Regular and Distance)

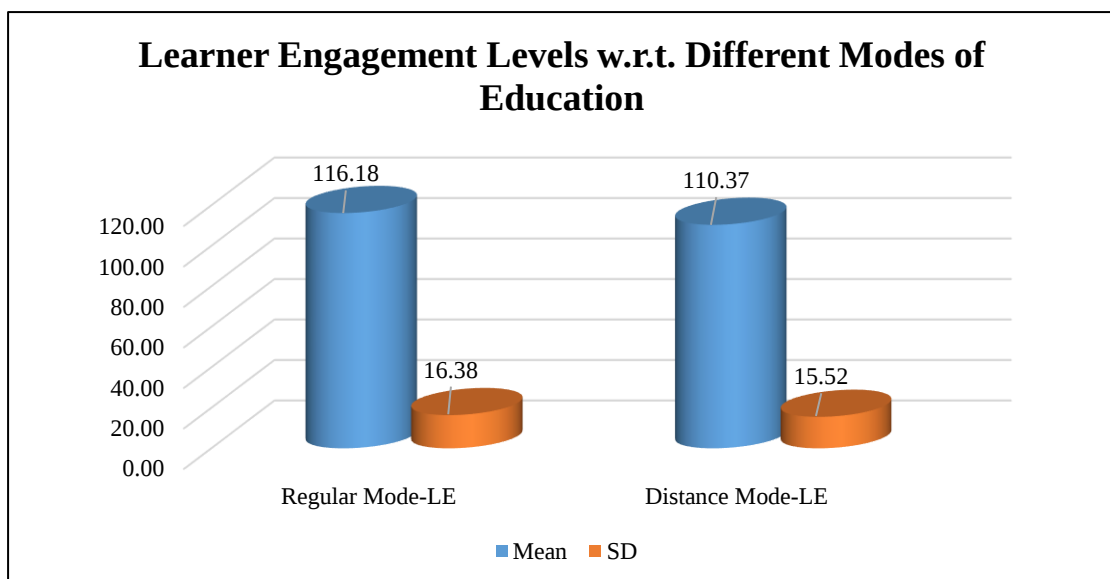


Table 4.6.4e and Figure 4.6.4e depicts the mean value and standard deviation of the Learner Engagement Levels of higher education learners with respect to Mode of Education

- The mean value was 116.18 and the standard deviation was 16.38 of the Learner Engagement Levels of regular mode of higher education learners. The value of median was 117. The value of median is more than the mean value therefore the distribution is negatively skewed. This indicates that many regular mode higher education learners have Learner Engagement Levels higher than the average score of the group. The value of Kurtosis was 0.03 which is less than the normal distribution value 0.263. Thus, the distribution was Leptokurtic among the regular mode of higher education learners.
- The mean value was 110.37 and the standard deviation was 15.52 of the Learner Engagement Levels of distance mode of higher education learners. The value of median was 110. The value of median is less than the mean value therefore the distribution is positively skewed. This indicates that many distance mode higher education learners have Learner Engagement Levels less than the average score of the group. The value of Kurtosis was -0.94 which is more than the normal distribution value 0.263. Thus, the distribution was Platykurtic among the distance mode of higher education learners
- The mean Learner Engagement Levels score among regular mode higher education learners was higher i.e. better than the distance mode higher education learners

4.7 Conclusion

The descriptive analysis presents the facts, or the situation of the representative of the sample. The summary received by descriptive statistics helped the researcher to make evaluations across various elements in the study. The result is demonstrated in the form of tables, charts and graphs. The analysis is done based on the objectives numbered 1 to 4. Thus, it allows the researcher to infer the outcome in an explicit manner. However, descriptive analysis has the limitation of generalizing to other people or objects i.e., using data from a sample to infer the properties/parameters of a population. This arouses the need to adopt inferential statistical techniques to extend the generalization, and reach to conclusions that extend beyond the immediate data alone. Therefore, inferential statistics was used to make judgments of the probability that

observed difference between groups is a dependable one, or one that might have happened by chance in this study. The researcher will implement inferential analysis in the subsequent chapter.

CHAPTER 5

INFERENCEAL ANALYSIS

5.1 Introduction

In all quantitative research questions or hypotheses, individuals sampled from a population are studied. Descriptive statistics describes data and inferential statistics allows to make predictions (inferences) from that data. With inferential statistics, data from samples are taken, and generalizations about a population are made. However, in descriptive questions, only a single variable one at a time is studied, while in inferential analysis, multiple variables at the same time are analysed. In addition, from comparing groups or relating variables, the researcher can also make predictions about the variables.¹⁴¹ Hypotheses that make predictions comparing groups or relating variables are then accordingly tested.¹⁴²

Inferential analysis is thus concerned with the various tests of significance for testing hypotheses, in order to determine with what validity data can be said to indicate some conclusion or conclusions. It is also concerned with the estimation of population values. It is mainly on the basis of inferential analysis that the task of interpretation (i.e., the task of drawing inferences and conclusions) is performed.

Inferential statistical data analysis involves the process of sampling, and the selection of a small group that is assumed to be related to the population from which it is drawn. The main purpose of inferential analysis is drawing conclusions about populations based on observations of samples.¹⁴³

Inferential statistics are also known as sampling statistics, and are mainly concerned with two major type of problems:¹⁴⁴

- (i) the estimation of population parameters, and
- (ii) the testing of statistical hypotheses.

¹⁴¹ <https://www.statisticshowto.com/probability-and-statistics/statistics-definitions/inferential-statistics/>

¹⁴² Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education. p. 338

¹⁴³ Pathak, R. P., *Research in Education and Psychology*, 1st edition Dorling Kindersley (India) Pvt. Ltd, 2011, p 181.

¹⁴⁴ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers.p 131

Therefore, inferential analysis is concerned also with the precision and reliability of the inferences it helps to draw.

5.2 The Null Hypothesis

Hypothesis is usually considered as the principal instrument in research. Hypotheses are statements that narrow the purpose statement into specific predictions about the relationship among variables. The main function of hypotheses is to serve in scientific inquiry are the development of theory and the statement of parts of an existing theory in testable form. Based on the findings of the subsequent research, the hypothesis is supported or rejected, and more hypotheses are formulated to continue the process of building a cohesive theory.¹⁴⁵

For the present study, null hypotheses (H_0) were framed.

The task of the research is to support or not to support the null hypothesis¹⁴⁶. Thus, the researcher tries to disprove, reject or nullify the null hypothesis. Statistical significance is the number, called a p-value, which tells the probability of the result being observed, given that a certain statement (the null hypothesis) is true. If the p-value is sufficiently small, the experimenter can safely assume that the null hypothesis is false.

5.3 Setting up the Level of Significance

A confidence interval or interval estimate is the range of upper and lower statistical values that is consistent with observed data, and is likely to contain the actual population mean. In this approach, an interval or range is determined in which the population score would likely fall.¹⁴⁷

The researcher has to decide about the level of confidence or significance at which the hypotheses are going to be tested. It can be either at 0.05 or 5% level or a more rigid level i.e. 0.01 or 1% level of confidence. When a hypothesis is rejected at 0.05 or 5% level of significance, it is said that the chances are 95 out of 100, that the hypothesis is not true and only 5 chances out of 100 that it is true. When a hypothesis is rejected at 0.01 or 1% level of significance, then the chances are 99 out of 100, that the hypothesis

¹⁴⁵ Best, J. W. & Kahn J. V. (2017). *Research in Education*. (10th ed.). Pearson Education Inc. p. 12

¹⁴⁶ Cohen, L., Manion, L., & Morrison, K. (2017). *Research Methods in Education* (8th ed.). Routledge. p.744

¹⁴⁷ Creswell, J. W. (2015). *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, (5th ed.). Pearson Education, p. 186

is not true, and that only 1 chance out of 100 is true. For this study, the significance levels adopted were 0.01 and 0.05.¹⁴⁸

5.4 Parametric Statistics

Inferential statistics, also called inductive statistics, fall into one of two categories: tests for difference of means, and tests for statistical significance, the latter one further subdivided into parametric and non-parametric. Parametric tests assume that the data are normally, or nearly normally, distributed.

Some of the parametric test are t-test, z-test, Analysis of Variance (ANOVA), and Pearson correlation coefficient.

To test the null hypotheses of the present study, the statistical techniques used were:

1) Pearson's Product-Moment Method: The coefficient of correlation computed by this method is known as the Product Moment Coefficient Of Correlation or Pearson's Correlation Coefficient and symbolically represented by r . The correlation coefficient formula helps to calculate the relationship between two variables, and thus the result so obtained explains the exactness between the predicted and actual values.¹⁴⁹

It is calculated by using the following formulas:

$$r_{xy} = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$$

where:

r_{xy} = Correlation between X and Y (two sets of scores)

x_i = values of the x-variable in a sample

$\bar{x}$ = mean of the values of the x variable

y_i = values of the y-variable in a sample

$\bar{y}$ = mean of the values of the y variable

In this formula, the basic quantity to determine the degree of correlation or correspondence between the two sets of variables x and y is $\frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$. The

¹⁴⁸ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers 182

¹⁴⁹ <https://www.cuemath.com/correlation-coefficient-formula/>

higher the value, the larger will be the degree of correlation. This term $\frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$ is known as the product moment, and the corresponding correlation is called the product moment correlation. This formula was used to find the correlation between the Motivation and Learner Engagement in the higher education learners. The correlation was also studied with reference to the moderator variables.

2) t-test: t-test is considered an appropriate test for judging the significance of a sample mean or for judging the significance of difference between the means of two samples, in case of small sample when population variance is not known. The independent samples t-test is used when two separate sets for independent and identically distributed samples are obtained, one from each of the two populations being compared.¹⁵⁰

The formula for t-test is:

$$z = \frac{M_1 - M_2}{\sigma_D} = \frac{\text{Difference between means}}{\text{Standard error of difference between means}}$$

Where standard error of difference is calculated with the formula:

$$\text{SED or } \sigma_D = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

The table of t-distribution is referred, which gives the critical values based on the calculated degrees of freedom.

Number of degrees of freedom is calculated by using the formula:

$$df = (N_1 + N_2) - 2$$

In the present study, t-test was also used to find the difference in the variables of the study.

3) Two way Analysis of Variance (Two way ANOVA) - is a composite procedure for testing simultaneously the difference between several sample means. It helps to know whether any of the differences between the given samples are significant. If the answer is yes, then further t-test is used to find out where the significant differences lie. If the answer is no, then there is no proceeding further. In two-way analysis, total variance is

¹⁵⁰ Kothari, C. R. (2021). *Research Methodology Methods and Techniques*, (4th ed.). New Age International (P) Limited Publishers pg. 192.

broken into three parts - variance due to one variable, variance due to other variable, and interaction or residual variance on account of the supposed interaction between variables. Two F-ratios are computed for determining the significance of the difference between group means, at a given level of significance.¹⁵¹

$$F \text{ (for one variable)} = \frac{\text{Mean square variance between one variable}}{\text{Mean square variance in terms of interaction}}$$

$$F \text{ (for the other variable)} = \frac{\text{Mean square variance between one variable}}{\text{Mean square variance in terms of interaction}}$$

Interpretation is made by comparing these F-ratios with critical F values read from the table for computed degrees of freedom, at a given level of significance.

Two-way ANOVA was also used to find the difference between the variables since there were more than two groups.

5.5 Testing of Hypotheses

5.5.1 There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners

Table 5.5.1 Correlation between Motivation Levels and Learner Engagement Levels in higher education learners

Var.	N	Σxy	Σx^2	Σy^2	df	'r' value	Level of Sig.	H ₀ Accepted/ Rejected
							**0.01/ *0.05	
M	423	33340.36	110001.7212	113075.32	421	0.30	**S	Rejected
LE								

From Table 5.5.1

- The obtained value of coefficient of correlation 'r' after correlating the Motivation Level scores of higher education learners with their Learner Engagement Levels was 0.30.

¹⁵¹ Mangal, S.K. (2012) .*Statistics in Psychology and Education* (2nd ed.). PHI Learning Pvt. Ltd. p. 324.

- The positive value of 'r' indicates a positive correlation between the variables which means for higher education learners' if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.
- The calculated 'r' value was close to zero therefore the correlation between Motivation Levels and Learner Engagement Levels in higher education learners was low, definite but small relationship.
- Since the obtained 'r' value was higher than the table value of 'r' which is 0.098 at 0.05 level of significance and 0.128 at 0.01 level of significance, it indicates that the correlation between the Motivation Levels and Learner Engagement Levels of higher education learners is statistically significant and therefore the null hypothesis is rejected at 0.01 level of significance.

Conclusion: There is a significant correlation between the Motivation Levels of higher education learners with their Learner Engagement Levels.

5.5.2a: There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to Gender

Table 5.5.2a Correlation between Motivation Levels and Learner Engagement Levels:
Gender

Gender	Var.	N	Σxy	Σx^2	Σy^2	df	'r' value	Level of Sig.	H ₀ Accepted/ Rejected
								**0.01/ *0.05	
F	M	277	23821.92	69192.4048	72504.76	275	0.34	**S	Rejected
	LE								
M	M	146	7939.877	39908.7466	37803.57	144	0.20	**S	Rejected
	LE								

From Table 5.5.2a

- The obtained value of coefficient of correlation 'r' after correlating the Motivation and Learner Engagement of female higher education learners was found to be 0.34 and for male higher education learners was found to be 0.20.
- The positive value of 'r' among both the genders indicates a positive correlation between the variables. It means that for both male and female higher education learners if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.
- The calculated 'r' value in both female and male higher education learners was close to zero hence the correlation was low, definite but small relationship.
- The obtained 'r' value among both the genders was higher than the table value of 'r' which at 0.01 level of significance it is 0.181 for female higher education learners and 0.208 for male higher education learners. The values indicate a statistically significant correlation between Motivation Levels and Learner Engagement Levels of female and male higher education learners. Therefore, the null hypothesis is rejected at 0.01 level of significance for both female and male higher education learners.

Conclusion: There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to gender. A better correlation between the variables was found among female higher education learners.

5.5.2b: There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to Age Groups

Table 5.5.2b Correlation between Motivation Levels and Learner Engagement Levels:
Age Groups

Age Groups	Var.	N	$\sum xy$	$\sum x^2$	$\sum y^2$	df	'r' value	Level of Sig.	H ₀ Accepted/ Rejected
								**0.01/ *0.05	
17-27	M	386	30881.64	102941.1466	105160.6	384	0.30	**S	Rejected
	LE								
28-38	M	26	787.5	3112.5	6190.654	24	0.18	*NS	Accepted
	LE								
39-49	M	11	970.2725	3128.728	1092.728	9	0.52	*NS	Accepted
	LE								

From Table 5.5.2b

- The obtained value of coefficient of correlation 'r' after correlating Motivation Levels and Learner Engagement levels of higher education learners was found to be for age group (17-27) is 0.30, for age group (28-38) is 0.18 and for age group (39-49) is 0.52.
- The positive value of 'r' among all the three age groups indicates a positive correlation between the variables. It means that for all the three age groups higher education learners if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.
- The calculated 'r' value among the higher education learners of all the three age groups was close to zero. For the age group (17-27) there was low correlation, definite but small relationship. For the age group (28-38) the correlation was slight, almost negligible relationship. For the age group (39-49) the correlation was moderate, substantial but small relationship.
- The obtained 'r' value for the age group (17-27) was higher than the table value of 'r' which at 0.05 level of significance is 0.113 and at 0.01 level of significance it is 0.148. The values indicate a statistically significant correlation between

Motivation Levels and Learner Engagement Levels higher education learners of age group (17-27). Therefore, the null hypothesis is rejected at 0.01 level of significance for higher education learners of age group (17-27).

- However, in case of higher education learner from age groups (28-38) and (39-49) the obtained 'r' value was lower than the table value of 'r' at 0.05 level of significance. The table value of 'r' for age group (28-38) is 0.388 and for age group (39-49) is 0.602 at 0.05 level of significance. Even though, for age group (39-49) the correlation after referring to the correlation table shows as moderate, substantial, the obtained r value is less than the critical r value. Hence the null hypothesis was accepted at 0.05 level of significance for both age groups (28-38) and (39-49).

Conclusion: There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from the age group (17-27). There is no significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from the age groups (28-38) and (39-49).

5.5.2c: There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to: Undergraduate and Postgraduate Degree

Table 5.5.2c Correlation between Motivation Levels and Learner Engagement Levels: UG and PG Degree

Degree (UG/ PG) Course	Var	N	$\sum xy$	$\sum x^2$	$\sum y^2$	df	'r' val.	Level of Sig.	H ₀ Accepted/ Rejected
								**0.01/ *0.05	
UG	M	376	28342.12	99696.4224	100456.3	374	0.28	**S	Rejected
	LE								
PG	M	47	4979.553	10294.6383	12586.21	45	0.44	**S	Rejected
	LE								

From Table 5.5.2c

- The obtained value of coefficient of correlation 'r' after correlating the Motivation Levels and Learner Engagement Levels of higher education learners in UG Degree Course was found to be 0.28 and for higher education learners in PG Degree Course was found to be 0.44.
- The positive value of 'r' among both UG and PG Degree Course higher education learners indicates a positive correlation between the variables. It means that for both UG and PG Degree Course higher education learners if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.
- The calculated 'r' value in both UG and PG Degree Course higher education learners was close to zero. In UG Degree Course higher education learners the correlation was low, definite but small relationship. In PG Degree Course higher education learners the correlation was moderate, substantial but small relationship.
- The obtained 'r' value among both UG and PG Degree Course learners was higher than the table value of 'r' which at 0.05 level of significance is 0.113 for UG Degree Course higher education learners and 0.288 for PG Degree Course higher education learners; and at 0.01 level of significance it is 0.148 for UG Degree Course higher education and 0.372 for PG Degree Course higher education learners. The values indicate a statistically significant correlation between Motivation Levels and Learner Engagement Levels of both UG and PG Degree Course higher education learners. Therefore, the null hypothesis is rejected at 0.01 level of significance for both UG and PG Degree Course higher education learners.

Conclusion: There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to UG and PG Degree Course. A better correlation between the variables was found among PG Degree Course higher education learners.

5.5.2d: There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to: Different Streams

Table 5.5.2d Correlation between Motivation Levels and Learner Engagement Levels: Different Streams

Diff. Streams	Var.	N	Σxy	Σx^2	Σy^2	df	'r' val	Level of Sig.	H ₀ Accepted /Rejected
								**0.01 / *0.05	
Sci.	M	103	12238.88	28109.0492	24800.68	101	0.46	**S	Rejected
	LE								
Comm.	M	224	12992.98	61697.96	58234.21	222	0.22	**S	Rejected
	LE								
Arts	M	40	3719.376	8629.376	12964.98	38	0.35	*S	Rejected
	LE								
Mngt.	M	8	701	551.5	2524	6	0.59	*NS	Accepted
	LE								
Engg.	M	48	3096.375	10053.9168	12138.81	46	0.28	*NS	Accepted
	LE								

From Table 5.5.2d

- The obtained value of coefficient of correlation 'r' after correlating the Motivation Levels and Learner Engagement Levels of higher education learners in Science stream was found to be 0.46, for Commerce stream 0.22, for Arts stream 0.35, for Management stream 0.59 and for Engineering Stream 0.28.
- The positive value of 'r' among all the streams of higher education learners indicates a positive correlation between the variables. It means that in all streams of higher education learners if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels

decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.

- The calculated 'r' value in all the different streams in higher education learners was close to zero. In Science and Management streams the correlation was moderate, substantial but small relationship. While in Commerce, Arts and Engineering streams the correlation was low, definite but small relationship.
- The table value at 0.05 level of significance for Science stream it is 0.195, for Commerce stream it is 0.138, for Arts it is 0.325, for Management stream it is 0.707 and for Engineering stream it is 0.288. The table value at 0.01 level of significance for Science stream it is 0.254, for Commerce stream it is 0.181, for Arts it is 0.418, for Management stream it is 0.834 and for Engineering stream it is 0.372.
- The obtained 'r' value in the higher education learners belonging to Science, Commerce streams was higher than the table value of 'r'. The values indicate a statistically significant correlation between Motivation Levels and Learner Engagement Levels of higher education learners belonging to Science, Commerce, and Arts streams. Therefore, the null hypothesis is rejected at 0.01 level of significance for Science, Commerce, streams. While for Arts stream the obtained value was greater than the table value at 0.05 level of significance. Therefore, the null hypothesis was rejected at 0.05 level of significance.
- While for Management stream, even though the correlation after referring to the correlation table shows as moderate, substantial, the obtained 'r' value was less than the table values. For Engineering stream the obtained 'r' value was less than the table 'r' value. The results indicate a statistically insignificant correlation between the variables. Therefore, the null hypothesis is accepted at 0.05 level of significance for both Management and Engineering streams.

Conclusion: There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from streams of Science, Commerce and Arts.

There is no significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from Management and Engineering streams.

5.5.2e: There is no significant correlation between Motivation Levels and Learner Engagement Levels in higher education learners with respect to: Mode of Education (Regular and Distance)

Table 5.5.2e Correlation between Motivation Levels and Learner Engagement Levels: Mode of Education (Regular and Distance)

Mode of Edu.	Var.	N	$\sum xy$	$\sum x^2$	$\sum y^2$	df	'r' val.	Level of Sig.	H ₀ Accepted /Rejected
								**0.01 / *0.05	
Reg.	M	371	28844.01	95005.4131	99239.54	369	0.30	**S	Rejected
	LE								
Dist.	M	52	4087.885	14888.2308	12292.06	50	0.30	*S	Rejected
	LE								

From Table 5.5.2e

- The obtained value of coefficient of correlation 'r' after correlating the Motivation and Learner Engagement for higher education learners in regular mode of education and in distance mode of education was found to be 0.30.
- The positive value of 'r' among both the mode of education (regular and distance) indicates a positive correlation between the variables. It means that for higher education learners belonging to both regular and distance mode of education, if the Motivation Levels increases then their Learner Engagement Levels increases and when Motivation Levels decreases Learner Engagement Levels also decreases i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together.
- The calculated 'r' value in both regular and distance higher education learners was close to zero hence the correlation was low, definite but small relationship.
- The obtained 'r' value among the regular higher education learners was higher than the table 'r' value which is 0.148 at 0.01 level of significance. The results indicate a statistically significant correlation between the variables. Therefore, the null hypothesis is rejected at 0.01 level of significance for regular higher education learners. The obtained 'r' value among the distance higher education

learners was higher than the table 'r' value which is 0.273 at 0.05 level of significance. The results indicate a statistically significant correlation between the variables. Therefore, the null hypothesis is rejected at 0.05 level of significance for distance higher education learners.

Conclusion: There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to regular and distance mode of education.

5.5.3a: There is no significant difference in the Motivation Levels in higher education learners with respect to Gender

Table 5.5.3a t-test value of Motivation Levels: Gender

Gender	N	Mean	SD	SE _D	df	't' value	Level of Significance	H ₀ Accepted /Rejected
							**0.01/ *0.05	
Female	277	85.68	15.83	1.67	421	0.06	*NS	Accepted
Male	146	82.61	16.59					

As per table 5.5.3a

- The calculated 't' value was 0.06 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant difference in the Motivation Levels in higher education learners with respect to gender. Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the Motivation Levels in higher education learners with respect to gender. The mean value of female higher education learners was more than the male higher education learners.

5.5.3b: There is no significant difference in the Motivation Levels in higher education learners with respect to Age Groups

Table 5.5.3b ANOVA results of Motivation Levels: Age Groups

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	819.35	2	409.68	1.58	0.208036	3.02
Within Groups	109182.4	420	259.96			
Total	110001.7	422				

As per Table 5.5.3b

- The obtained F value after comparing the scores of Age groups (17-27), (28-38) and (39-49) of higher education learners was 1.58 which is less than the F critical table value 3.02 at 0.05 level of significance. Therefore, the hypothesis was accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the Motivation Levels in higher education learners with respect to age Groups.

5.5.3c: There is no significant difference in the Motivation Levels in higher education learners with respect to Undergraduate and Postgraduate Degree

Table 5.5.3c t-test value of Motivation Levels: UG and PG Degree

Degree (UG/PG)	N	Mean	SD	SE_D	df	‘t’ value	Level of Significance	H₀ Accepted /Rejected
							**0.01/ *0.05	
UG	376	84.68	16.31	2.34	421	0.84	*NS	Accepted
PG	47	84.17	14.96					

From the Table 5.5.3c

- The calculated ‘t’ value was 0.84 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant difference in the Motivation Levels in higher education learners with respect to Degree (UG/PG). Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the in the Motivation Levels in higher education learners with respect to degree (UG/PG). The mean value of undergraduate higher education learners was more than the postgraduate higher education learners.

5.5.3d: There is no significant difference in the Motivation Levels in higher education learners with respect to Different Streams

Table 5.5.3d ANOVA results of Motivation Levels: Different Streams

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	959.92	4.00	239.98	0.92	0.452153	2.39
Within Groups	109041.8	418	260.87			
Total	110001.7	422				

As per Table 5.5.3d

- The obtained F value after comparing the scores of different streams that included Science, Arts, Commerce, Management and Engineering of higher education learners was 0.92 which is less than the F critical table value 2.39 at 0.05 level of significance. Therefore, the hypothesis was accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the Motivation Levels in higher education learners with respect to different streams.

5.5.3e: There is no significant difference in the Motivation Levels in higher education learners with respect to Mode of Education (Regular and Distance)

Table 5.5.3e t-test value of Motivation Levels: Mode of Education (Regular and Distance)

Mode of Education (Regular/ Distance)	N	Mean	SD	SE_D	df	‘t’ value	Level of Significance	H₀ Accepted /Rejected
							**0.01/ *0.05	
Regular	371	84.81	16.02	2.51	421	0.52	*NS	Accepted
Distance	52	83.27	17.09					

From the Table 5.5.3e

- The calculated 't' value was 0.52 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant difference in the Motivation Levels in higher education learners with respect to regular and distance mode of education. Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the in the Motivation Levels in higher education learners with respect to regular and distance mode of education. The mean value of regular higher education learners was more than the distance higher education learners.

5.5.4a: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Gender

Table 5.5.4a t-test value of Learner Engagement Levels: Gender

Gender	N	Mean	SD	SEd	df	't' value	Level of Significance	H ₀ Accepted /Rejected
							**0.01/ *0.05	
Female	277	117.32	16.21	1.65	421	0.001	*NS	Accepted
Male	146	111.95	16.15					

As per table 5.5.4a

- The calculated 't' value was 0.001 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant difference in the Learner Engagement Levels in higher education learners with respect to gender. Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to gender. The mean value of female higher education learners was more than the male higher education learners.

5.5.4b: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Age Groups

Table 5.5.4b ANOVA results of Learner Engagement Levels: Age Groups

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	631.36	2	315.68	1.18	0.308565	3.02
Within Groups	112444	420	267.72			
Total	113075.3	422				

As per Table 5.5.4b

- The obtained F value after comparing the scores of age groups (17-27), (28-38) and (39-49) of higher education learners was 1.18 which is less than the F critical table value 3.02 at 0.05 level of significance. Therefore, the hypothesis was accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to age groups.

5.5.4c: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Undergraduate and Postgraduate Degree

Table 5.5.4c t-test value of Learner Engagement Levels: UG and PG Degree

Degree (UG/PG)	N	Mean	SD	SE_D	df	‘t’ value	Level of Significance	H₀ Accepted /Rejected
							**0.01/ *0.05	
UG	376	115.57	16.37	2.56	421	0.73	*NS	Accepted
PG	47	114.68	16.54					

From the Table 5.5.4c

- The calculated ‘t’ value was 0.73 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant

difference in the Learner Engagement Levels in higher education learners with respect to degree (UG/PG). Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to degree (UG/PG). The mean value of undergraduate higher education learners was more than the postgraduate higher education learners.

5.5.4d: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Different Streams

Table 5.5.4d ANOVA results of Learner Engagement Levels: Different Streams

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2412.64	4	603.16	2.28	0.060189	2.39
Within Groups	110662.7	418	264.74			
Total	113075.3	422				

As per Table 5.5.4d

- The obtained F value after comparing the scores of different streams that included Science, Arts, Commerce, Management and Engineering of higher education learners was 2.28 which is less than the F critical table value 2.39 at 0.05 level of significance. Therefore, the hypothesis was accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to different streams.

5.5.4e: There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Mode of Education (Regular and Distance)

Table 5.5.4e t-test value of Learner Engagement Levels: Mode of Education (Regular and Distance)

Mode of Education (Regular/ Distance)	N	Mean	SD	SE _D	df	't' value	Level of Significance	H ₀ Accepted /Rejected
							**0.01/ *0.05	
Regular	371	116.18	16.38	2.31	421	0.02	*NS	Accepted
Distance	52	110.37	15.52					

From the Table 5.5.4e

- The calculated 't' value was 0.52 for df 421 which is lesser than the critical table value of 1.97 at 0.05 level of significance. It indicates there is no significant difference in the Learner Engagement Levels in higher education learners with respect to regular and distance mode of education. Therefore, the null hypothesis is accepted at 0.05 level of significance.

Conclusion: There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to regular and distance mode of education The mean value of regular higher education learners was more than the distance higher education learners.

5.6 Conclusion

The hypotheses were tested using Pearson's moment, t-test and Two-way ANOVA. Thus, the researcher was able to derive the results and make conclusion with respect to the study. The next chapter presents the major findings and interpretations consolidated by the researcher to make meaning from the results of the study.

CHAPTER 6

SUMMARY AND CONCLUSIONS

6.1 Introduction

In most of the countries of the world, the ‘education’ of their populations is currently seen as a key means of national flourishing, within an environment of increasing globalisation. The pursuit of the greatest education has always been a top priority for human civilization. Education is what distinguishes one human from another, liberates from the shambles, and empowers to act for the betterment of society. There are various categories of education such as primary education, secondary education, senior secondary education, higher education. Higher education begins post-secondary education in learning institutions.

Higher education deals with the tertiary level of education. Undergraduate colleges, Post-graduate colleges. Universities and centres of advanced studies are coming under scope of higher education. The completion of higher education results in a degree, diploma, or certificate. The institutions that provide education in higher studies are universities, colleges, and various professional schools. The minimum eligibility to gain higher education is the completion of secondary education and an entrance age above 18 years. There is great amount of importance associated with higher education.

Higher education system plays an important role for the country’s overall development which includes industrial, social, economic etc. Indian higher education system is third largest in the world. The role of Indian higher educational institutes such as colleges and universities in the present time is to provide quality based education in the field of education, research etc. to empower youth for self-sustainability. In the Indian context there are many challenges like demand-supply gap, lack of quality research, problem of infrastructure and basic facilities, shortage of faculty etc. seen in the higher education.¹⁵² High dropout rates continue to be an epidemic afflicting Indian education system.

¹⁵² Sharma, S., & Sharma, P. (2015). Indian Higher Education System: Challenges And Suggestions, *Electronic Journal for Inclusive Education*, 3 (4).
<https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1179&context=ejie#:~:text=In%20this%20paper%20we%20have,etc%20in%20the%20higher%20education.>

The lack of collaborative partnerships with learners in educational institutions has alienated student ownership and impacted the student's ability to stay and succeed (Mitra, 2003)¹⁵³. In order to reduce the issues and challenges it is critical to identify points of leverage through which learning outcomes may be improved. One such device is academic Motivation, which is a socio-emotional approach to learning characterized by interest, challenge seeking, participation, and enthusiasm (Curtis, 2017). Some proportion of learners also responds poorly to the demands and expectations of educational standards. This might be attributed to innate differences between individuals, except that the proportions of less successful learners vary, between otherwise indistinguishable populations, in ways that can only reasonably be attributed to 'environmental' causes. One possible explanation of these differences between populations is that their young are differently motivated and engaged in their learning.

Human beings are born with natural curiosity and a motivation to learn, yet some lose those abilities as they grow older.¹⁵⁴ Learners sometimes need to relinquish their personal urges to do behaviours they do not find enjoyable, but are presumably for their own good, and also for the good of the collective. In developmental psychology, the process of learning the norms and behaviours necessary to coexistence is called internalization.¹⁵⁵ True learning is a lifelong process. But to continuously achieve, learners must find it enjoyable and rewarding to learn. Many factors shape individual inclinations toward the process of learning, and education. These factors are critical in context that can influence learners' later attitudes toward the acquisition of knowledge and growth. Two such factor are Motivation and Learner Engagement.

In the context of education, learners' levels of Motivation are reflected in their engagement and contribution to the learning environment. Highly motivated learners are usually actively and spontaneously involved in activities and find the process of learning enjoyable without expecting any external rewards (Skinner & Belmont, 1993)¹⁵⁶. On the other hand, learners who exhibit low levels of motivation to learn will

¹⁵³ Mitra, D. (2003). Student Voice in School Reform: from Listening to Leadership. *International Handbook of Student Experience in Elementary and Secondary School*, 727-744. doi:10.1007/1-4020-3367-2_29

¹⁵⁴ <https://positivepsychology.com/motivation-education/>

¹⁵⁵ Gagné M. (Ed.) (2014). *The Oxford handbook of work engagement, motivation, and self-determination theory*. Oxford University Press.

¹⁵⁶ Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571–581. <https://doi.org/10.1037/0022-0663.85.4.571>

often depend on the rewards to encourage them to participate in activities they may not find enjoyable.

The present study's attempt at finding the correlation between Motivation [M] and Learner Engagement [LE] of higher education learners was seen in the results which were as per the findings and assumption of the researcher. It was evident that the variable Motivation was related to Learner Engagement of higher education learners. The correlation was positive, indicating that an increase in Motivation will lead to increase in Learner Engagement

6.2 Restatement of the problem

“A Correlational Study between Motivation and Learner Engagement among Higher Education Learners”

6.3 An Overview

(i.) Data analysis with respect to correlation between Motivation Levels and Learner Engagement Levels in higher education learners

Correlation: Motivation and Learner Engagement

Var.	N	Σxy	Σx^2	Σy^2	df	'r' value	Level of Sig.	H ₀ Accepted/ Rejected
							**0.01/ *0.05	
M	423	33340.36	110001.7212	113075.32	421	0.30	**S	Rejected
LE								

(ii) Correlation: Motivation and Learner Engagement w.r.t. moderator variables

Moderator Variables	Variables	N	$\sum xy$	$\sum x^2$	$\sum y^2$	df	'r' val.	Level of Sig.	H ₀ Accepted /Rejected
								**0.01/ *0.05	
Female	M	277	23821.92	69192.4048	72504.76	275	0.34	**S	Rejected
	LE								
Male	M	146	7939.877	39908.7466	37803.57	144	0.20	**S	Rejected
	LE								
17-27	M	386	30881.64	102941.1466	105160.6	384	0.30	**S	Rejected
	LE								
28-38	M	26	787.5	3112.5	6190.654	24	0.18	*NS	Accepted
	LE								
39-49	M	11	970.2725	3128.728	1092.728	9	0.52	*NS	Accepted
	LE								
UG	M	376	28342.12	99696.4224	100456.3	374	0.28	**S	Rejected
	LE								
PG	M	47	4979.553	10294.6383	12586.21	45	0.44	**S	Rejected
	LE								
Sci.	M	103	12238.88	28109.0492	24800.68	101	0.46	**S	Rejected
	LE								
Com.	M	224	12992.98	61697.96	58234.21	222	0.22	**S	Rejected
	LE								
Arts	M	40	3719.376	8629.376	12964.98	38	0.35	*S	Rejected
	LE								
Mngt.	M	8	701	551.5	2524	6	0.59	*NS	Accepted
	LE								

Engg.	M	48	3096.375	10053.9168	12138.81	46	0.28	*NS	Accepted
	LE								
Reg	M	371	28844.01	95005.4131	99239.54	369	0.30	**S	Rejected
	LE								
Dist	M	52	4087.885	14888.2308	12292.06	50	0.30	*S	Rejected
	LE								

(iii) Data Analysis of Motivation Levels of Higher Education Learners

Range of scores with level	Total samples	%
High (97-120)	105	24.82
Moderate (48-96)	313	74.00
Low (24-47)	5	1.18
Total	423	100

(iv) Data Analysis of Motivation Levels w.r.t. Moderator Variables.

Moderator Variable	N	Mean	SD	SE_D	df	‘t’ value	Level of Significance	H₀ Accepted /Rejected
							**0.01 / *0.05	
Female	277	85.68	15.83	1.67	421	0.06	*NS	Accepted
Male	146	82.61	16.59					
UG	376	84.68	16.31	2.34	421	0.84	*NS	Accepted
PG	47	84.17	14.96					
Regular	371	84.81	16.02	2.51	421	0.52	*NS	Accepted
Distance	52	83.27	17.09					

(v) Data Analysis of Learner Engagement Levels of Higher Education Learners

Range of scores with levels	Total samples	%
High (129-160)	83	19.62
Moderate (64-128)	340	80.38
Low (32-63)	0	0
Total	423	100

(iv) Data Analysis of Learner Engagement Levels w.r.t. Moderator Variables.

Moderator Variable	N	Mean	SD	SE _D	df	't' value	Level of Significance	H ₀ Accepted /Rejected
							**0.01 / *0.05	
Female	277	117.32	16.21	1.65	421	0.001	*NS	Accepted
Male	146	111.95	16.15					
UG	376	115.57	16.37	2.56	421	0.73	*NS	Accepted
PG	47	114.68	16.54					
Regular	371	116.18	16.38	2.31	421	0.02	*NS	Accepted
Distance	52	110.37	15.52					

6.4 Principal Findings and Conclusions of the Present Study

1) *There is a significant correlation between the Motivation Levels of higher education learners with their Learner Engagement Levels.*

The positive value of 'r' indicates a positive correlation between the variables, which means for higher education learners if the Motivation Levels increases, then their Learner Engagement Levels increases, and when Motivation Levels decreases, Learner Engagement Levels also decreases, i.e. both Motivation Levels and Learner Engagement Levels tend to increase or decrease together. The correlational relation

between Motivation Levels and Learner Engagement Levels in higher education learners was low, definite but small relationship. The findings of the current research study was in accordance to the research done by Malini S., (2020) which presented that there was a significant relationship between the factors involving spiritual intelligence, motivation and student engagement. The low correlation can be attributed to the change in the educational settings during the pandemic and lock down conditions, bringing in a change in the Motivational Levels in relation with the Learner Engagement Levels. Ryan and Deci's Self Determination Theory (2009)¹⁵⁷ begins with the presumption that human beings are inherently proactive and endowed with a natural tendency to learn and develop as they engage not only their outer environments, but also their inner world of drives, needs, and experiences that either support or thwart human inherent tendencies. The conditions during pandemic were filled with enormous challenges viz., lockdown, social distancing, various concerns like social, physical, psychological, environmental, health, and economic. These conditions might be detrimental to the human inherent tendencies. Thus, the prevalent pandemic conditions might have impacted the correlation of Motivation and the Learner Engagement of the higher education learners.

2) *There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to gender.*

The positive value of 'r' among both the genders indicates a positive correlation between the variables. The correlation was low, definite but small relationship. Better correlation between the variables was found among female higher education learners. Change in perceptions, educational setting, negative peer attitudes could be attributed to the low correlation between Motivation and Learner Engagement in male higher education learners as compared to females in the current research study. This was in accordance to the research study done by King (2016)¹⁵⁸. According to the study, boys showed a more maladaptive profile in terms of academic motivation, engagement, and achievement. Path analyses indicated that these gender differences were associated with peer attitudes toward school. Boys perceived their friends to have more negative

¹⁵⁷ Ryan, R. M., & Deci, E. L. (2009). Promoting self-determined school engagement: Motivation, learning, and well-being

¹⁵⁸ King, R. (2016). Gender differences in motivation, engagement and achievement are related to students' perceptions of peer—but not of parent or teacher—attitudes toward school, *Learning and Individual Differences*, 52. doi: 10.1016/j.lindif.2016.10.006

attitudes toward school. These perceptions of negative peer attitudes toward school were associated with boys' lower levels of motivation, engagement, and achievement.

3) There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from the age group (17-27). There is no significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from the age groups (28-38) and (39-49).

The positive value of 'r' among all the three age groups indicates a positive correlation between the variables. For the age group (17-27) there was low correlation, definite but small relationship. For the age group (28-38) the correlation was slight, almost negligible relationship. For the age group (39-49) the correlation was moderate, substantial but small relationship. Although the correlation in the age group (39-49) was the highest followed by age group (17-27) and then (28-38), the sample sizes varied amongst the groups. The difference in the correlation in the age groups can be due to cognitive development, maturity levels and learning needs are different among the different age groups.

4) There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to UG and PG Degree Course.

The positive value of 'r' among both UG and PG degree course higher education learners indicates a positive correlation between the variables. In UG degree course higher education learners the correlation was low, definite but small relationship. In PG degree course higher education learners the correlation was moderate, substantial but small relationship. A better correlation between the variables was found among PG degree course higher education learners. The findings were in line with Falleiro (2013) which states a significant correlation between overall LMS features, and Student Engagement, Motivation and academic performance. The low correlation between Motivation and Learner Engagement can be due to the absence of good learner engagement strategies, shift to complete online education with less learner teacher contact, redundant curriculum etc., in higher education.

5) There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from streams of Science, Commerce and Arts.

The positive value of 'r' among all the streams of higher education learners indicates a positive correlation between the variables. In Science and Management streams the correlation was moderate, substantial but small relationship. While in Commerce, Arts and Engineering streams the correlation was low, definite but small relationship. The research findings in the current research showed that there is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from streams of Science, Commerce and Arts. There is no significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners from Management and Engineering streams. The findings can be attributed to the sudden shift into online education during the pandemic time. Courses like Science, Commerce, Engineering which require hands on experiences and practical applications had to manage theoretically through online education. This limited scope for practical learning can be the reason for low correlation. Arts stream requires more proximal social interactions, and that lacked during the pandemic. Low sample size can be one of the reasons for no significant correlation in case of Management stream. While for Engineering stream learners factors like academic stress, dilution of the syllabus with respect to industry needs, lack of quality teachers, lack of innovation and research, lack of skill based education, disregard of essential soft skills, lack of industry-academia interactions¹⁵⁹ can be the reasons for low relationship between Motivation and Learner Engagement.

6) *There is a significant correlation between the Motivation Levels and Learner Engagement Levels of higher education learners with respect to Mode of Education (Regular and Distance).*

The positive value of 'r' among both the modes of education (regular and distance) indicates a positive correlation between the variables. The correlation was low, definite but small relationship for both the modes of education. The correlation value for both the modes of education was the same. The reason could be due to the pandemic situation that had brought the whole world to a standstill. All schools, colleges, and universities suddenly switched to an online platform. Learners studying through regular mode of education were forced into distance education, and had to adapt to new changes and learn new skills. Learner-instructor interaction suffered in both the modes of education

¹⁵⁹ https://cevnnews.in/2021/08/major-problems-facing-engineering-education-in-india/#google_vignette

due to the sudden shift. The transition from comfort zones to a newer challenging zones can be reason for lower correlation.

7) There is no significant difference in the in the Motivation Levels in higher education learners with respect to Gender.

Gender did not influence Motivation levels and this finding was in support to the research study carried by Pakira and Mohakud (2017) which states that there is no significant difference in achievement motivation with respect to gender. However the findings contrasted to the findings of Shekhar and Devi (2012) who reported that there was a significant role of gender in achievement motivation of college learners. Although there was no significant difference in the motivation levels, the mean value of Motivation Levels of female higher education learners was more than the male higher education learners. The role of the home, family background and environment play role in the development of the gender patterns which needs further exploration.

8) There is no significant difference in the Motivation Levels in higher education learners with respect to Age Groups.

No difference in Motivation levels was found in the three age groups. The findings of the current research study was in contrast to the study conducted by Özlem and Abdulmenaf (2018), where statistical significance ($p < 0.05$) between age variable and academic motivations was recorded. The findings can be attributed to several different reasons such as learners' experiences and expectations; increase in family, job, community responsibilities; lack of enjoying to learn. The reasons would need further exploration.

9) There is no significant difference in the in the Motivation Levels in higher education learners with respect to Degree (UG/PG).

No difference in Motivation Levels with respect to Degree was found in the current research study, which was also seen in the research study carried by Pakira and Mohakud (2017), in which there was no significant difference in achievement motivation between UG and PG learners. The result is a subset of the main finding that the entire sample of higher education learners had an average level of Motivation Levels. The findings could be influenced by group size, goals and competencies, social interactions etc., which need further exploration.

10) *There is no significant difference in the Motivation Levels in higher education learners with respect to Different Streams.*

Different streams did not influence the Motivation levels of higher education learners. The current research findings contrasted to the findings of Shekhar and Devi (2012), who reported that there is a significant role of academic majors in achievement motivation of college learners in subjects of Science and Arts. The result is a subset of the main finding that the entire sample of higher education had an average level of Motivation Levels. The findings can be due to plenty of factors like place of education, personality of the learner, family etc., which requires further exploration.

11) *There is no significant difference in the in the Motivation Levels in higher education learners with respect to Mode of Education (Regular and Distance).*

Both modes of education (regular and distance) did not influence the Motivation Levels in higher education learners. The result is a subset of the main finding that the entire sample of higher education learners had an average level of Motivation Levels. The findings can be attributed to factors like intellectual levels, socio-economic status, learning strategies, emotional quotient, social skills etc., which needs further exploration.

12) *There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to Gender.*

Gender did not influence Learner Engagement level, which contrasted with study done by Korlat *et al.* (2021), in which the researchers empirically tested and reported higher perceived teacher support, intrinsic value, and learning engagement among girls than boys in their study. The role of the home, family background and environment play a role in the development of the gender patterns, which needs further exploration.

13) *There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Age Groups.*

No difference in Learner Engagement Levels was found in the three age groups. The findings were contrasted with the study by Covas and Veiga (2021), where it was revealed that learners of age 26 or older scored considerably higher results in engagement than their younger colleagues. According to Ruslin *et al.* (2014), as the learners grow older they find activities that are associated to their learning less

interesting or incapable of catering to their growth needs. Different age groups need to be addressed differently to create better Engagement Levels, which needs further exploration.

14) There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to Degree (UG/PG).

No difference in Learner Engagement Levels with respect to degree was found in the current research study. The result is a subset of the main finding that the entire sample of higher education learners had an average level of Learner Engagement Levels. The findings could be influenced by group size, educational strategies, curricula, etc., which need further exploration.

15) There is no significant difference in the Learner Engagement Levels in higher education learners with respect to Different Streams.

Different streams did not influence the Learner Engagement Levels of higher education learners. The result is a subset of the main finding that the entire sample of higher education learners had an average level of Learner Engagement Levels. The possible reasons for such findings can be due to the attaching to traditional teaching methodologies in all the streams. Andrews (2011) advocated teaching strategies like volunteer community services, engagement with family, working for pay for better Learner Engagement.

16) There is no significant difference in the in the Learner Engagement Levels in higher education learners with respect to Mode of Education (Regular and Distance).

Both modes of education (regular and distance) did not influence the Learner Engagement Levels in higher education learners. The result is a subset of the main finding that the entire sample of higher education learners had an average level of Learner Engagement Levels. The findings can be attributed to factors like sudden shift to online education during the pandemic. According to Deka (2021), most of the education system during the COVID-19 situation has been primarily converted to online education due to an emergency without adequate preparedness. Therefore, the factors identified for a normal online learning process, may not be similar for online education provided in emergency situations. This can be the reason due to which low Engagement Levels among the regular learners is observed, resulting into no significant difference between Regular and Distance Learners.

6.5 Recommendations Based on the Present Study

A significant correlation is found between Motivation of higher education learners with their Learner Engagement, though it was low. There are many researches that indicate strong relationships between Motivation and Learner Engagement. There is a need to improve their relationship. Therefore, in order to enhance the relationship between Motivation and Learner Engagement and bring about overall growth and development of the learners, faculty members, educational institutional output, management, the following recommendations that can help have been suggested.

- **Identifying learner's needs:** Needs are general wants and desires and can be broadly classified as biological needs and socio-psychological needs. Learners experience the three basic psychological needs of autonomy, competence, and relatedness in classroom (Wang *et al.*, 2019), and when these three needs are met, it improves the Motivation, energizes and vitalizes classroom engagement and learning. Institutions need to provide opportunities for learners to learn both autonomously and with others, and to develop their sense of competence. Witnessing this, learners are more likely to be motivated, to engage and succeed (Zepke, and Leach, 2010)¹⁶⁰. But in most cases, learners in many classrooms receive instruction, and are asked to write papers, complete projects, and learn new skills in ways that leave their psychological needs unmet. There is an absolute need to conceptualize needs-based intervention program in educational institutions, to help teachers develop a motivating style capable of supporting learners' psychological needs.¹⁶¹
- **Focusing on Active Learning:** Active learning requires learners to participate in class, as opposed to passive sitting and listening quietly. Strategies include, but are not limited to, brief question-and-answer sessions, discussion integrated into the lecture, brainstorming impromptu writing assignments, hands-on activities, service learning and experiential learning events. Active learning is needed to be combined with setting of clear expectations, designing effective evaluation strategies, and providing timely helpful feedback.¹⁶²

¹⁶⁰ Zepke, N., and Leach, L. (2010). Improving student engagement: Ten proposals for action. *Active Learning in Higher Education*, 11 (3), 167-177.

https://www.researchgate.net/publication/241643507_Improving_student_engagement_Ten_proposals_for_action

¹⁶¹ <https://positivepsychology.com/motivation-education/>

¹⁶² <https://teaching.washington.edu/topics/engaging-students-in-learning/>

- **Promoting Growth Mindset over Fixed Mindset:** According to Carol Dweck (2006) there are two types of Mindsets - Fixed and Growth. A Growth Mindset is the understanding that abilities and understanding can be developed. Those with a Growth Mindset believe that they can get smarter, more intelligent, and more talented through putting in time and effort. A Fixed Mindset is one that assumes abilities and understanding are relatively fixed. Those with a Fixed Mindset may not believe that intelligence can be enhanced, or that either have it or don't when it comes to abilities and talents. When students are taught a growth mindset, they take advantage of opportunities for self-development. A growth mindset rewards striving and struggle, seeing failure as an integral part of the process toward growth. A perspective that sees change and growth as possible facilitates collaboration and negotiation even when there is disagreement and conflict. This would lead to positive self-image and increased Motivation in learners.
- **Improving learners' Self-Efficacy:** Poor achievement among learners is brought about by low academic Motivation, is a major factor contributing to school dropout. Motivation affects Learner Engagement, or how their cognitions, behaviours, and affects are energized, directed, and sustained during academic activities. According to Bandura's social cognitive theory, self-efficacy (perceived capabilities for learning or performing actions at designated levels) is a key cognitive variable influencing Motivation and Learner Engagement. People's beliefs in their efficacy are developed by four main sources of influence, including
 - (i) Mastery experiences,
 - (ii) Vicarious experiences,
 - (iii) Social persuasion, and
 - (iv) Emotional states.

High self-efficacy has been linked with numerous benefits to daily life, such as resilience to adversity and stress, healthy lifestyle habits, improved employees performance, and educational achievement (Schunk *et al*, 2012).¹⁶³

¹⁶³Schunk, D. & Mullen, C. (2012). *Self-Efficacy as an Engaged Learner. Handbook of Research on Student Engagement* Chapter: 10 Publisher: Springer Science 10.1007/978-1-4614-2018-7_10.

- **Enhancing Learner Engagement using approaches and techniques in Andragogy:** Teachers in higher education institutions must promote the use of Learner Controlled Methods like Group Discussion, Workshops, Self-study, Web learning etc. It is found that approaches like Observing, Exploring, Discovering, Analysing, Critical Thinking, Reflection, Problem-Solving Method, Problem-Based Learning, Project-Based Learning, Use of Concept Maps, Contextualization, and Collaboration, endorses better learner participation.
- **Teaching with Technology:** During the COVID-19 pandemic, in an unprecedented manner, faculty from all around the world had to supplant traditional face-to-face instruction with remote synchronous and asynchronous teaching and learning experiences. Out of necessity, teaching practices rapidly embraced technology-based prototypical teaching methods. There is a need for continued acceptance of Digital Education. Digital collaborations that are rich in learner and faculty Engagement across different groups of learners, make use of technology for sense-making in social settings. Use of collaborative documents, discussion boards, slides, notes, whiteboards, and other file types provide a way for collaborative notetaking (Harbin, 2020)¹⁶⁴. In-classroom technologies — podium-based computers, wireless, real-time response systems (e.g., clickers) and web-based tools (e.g., blogs, online forums, wikis, podcasts, etc.) continue to change and improve student-teacher interaction. These tools have a high potential for supporting student learning in creative and innovative ways when properly aligned with the instructor's learning objectives and course content.¹⁶⁵ Regular utilization of Hybrid Learning and Blended Learning. Hybrid Learning is effective in improving of teacher-learner relationship in terms of learning Motivation (Aristika, 2021)¹⁶⁶.
- **Reconstructing Curriculum and Instructional Designing:** Reconstructing, redesigning, and regular updating of curriculum as per learner needs to be done by the policy makers and instructional designers. Faculties in higher education should also be provided with teacher training programme. Creativity and

¹⁶⁴ Harbin, M. Brielle (2020). Collaborative Note-Taking: A Tool for Creating a More Inclusive College Classroom. *College Teaching* 68, no. 4.

¹⁶⁵ <https://teaching.washington.edu/topics/engaging-students-in-learning/>

¹⁶⁶ Aristika, Ayu *et al.* (2021). The Effectiveness of Hybrid Learning in Improving of Teacher - Student Relationship in Terms of Learning Motivation. *Emerging Science Journal* (ISSN: 2610 -9182) Vol. 5, No. 4, August, 2021 <https://www.ijournalse.org/index.php/ESJ/article/view/559/pdf>

innovativeness among the learners in classroom settings should be encouraged. Curricula, syllabi, and teaching strategies must adapt to changing learner expectations and requirements.

6.6 Suggestions for Further Studies

Research is an unending process and every research work provides clue for further investigation. The success in solving a problem stimulates to solve other unsolved problems through a scientific probing. Every researcher after completing the research, feel inspired to do more research. Therefore, the present study opens up certain avenues for further research, which are briefly listed below:

- 1) The present study was limited to higher education learners. Similar correlational studies may be replicated on the learners of schools / junior colleges, and also among people from private and public sectors. Their results could be compared for a better understanding of their current standing.
- 2) A longitudinal or qualitative research on Motivation and Learner Engagement can provide data for identifying trends, and provide deeper insights into the trajectory of need satisfaction, and learning behaviour. This can provide impetus in improving teaching learning processes, curricula, instructional designing and assessment techniques.
- 3) Motivation and Learner Engagement can also be analysed and compared by factors such as ethnicity, class, parents, peers, social circumstances, and achievement scores, and their impact on higher education / junior college / school / teacher education can be investigated.
- 4) A research on Motivation and Learner Engagement, with respect to the influence of a third variable like Emotional Quotient, Social Skills, Cultural Diversity, etc., can provide further avenues of research explorations.
- 5) A directional hypothesis based research design, or a causal-comparatives research design on Motivation and Learner Engagement could be a potential research topic.

6.7 Conclusions

Motivation is considered as a precondition of and a basic component for Learner Engagement. In academic framework, Motivation of a learner denotes the extent to which a learner invests efforts into, and concentrates on learning for accomplishment

of successful outcomes. Learner Engagement is an intensity of behaviour, emotional quality, and personal effort of active involvement of learners in learning activities. Motivation guides learners' interest into important learning activities. When learners engage in learning, they will participate and engage in academic and social activities, and will have regulatory compliance and involvement in learning activities. Such learners will possibly get good learning achievement. Thus, both Motivation and Learner Engagement are considered significant for effective learning (Malini S., 2020). Motivation and engagement are important factors that guide behaviour, and as a result, it is very important for teachers to understand and use this knowledge in their teaching. By knowing how intrinsic and extrinsic Motivations and Learner Engagement relate to each other in learning process, the teacher is well placed to provide a more supportive environment for student learning and their own teaching (Marsh, 2000)¹⁶⁷.

The current research study shows that there exists a low yet statistically significant correlation between the Motivation and Learner Engagement in higher education learners. The correlation was positive in nature. Given the relatively low levels of correlation between the Motivation and Learner Engagement in higher education learners, it seems important for teachers to explore ways to motivate and actively engage learners in lessons. The results of this study will help teachers and teacher educators to use different strategies effectively to intrinsically and extrinsically motivate their learners, in order to enhance their engagement in learning, to achieve the best possible learner academics and social outcomes.

Using learner's voice, the current research study has investigated the higher education learners' insight regarding their own Motivation form, and how these could influence the establishment of a reliable Learner Engagement.

In the present circumstances, learners go through challenges such as technology advancement, competition, and inconsistent learning environment due to the pandemic conditions. The unprecedented changes in the means of generating, delivering, accessing, and disseminating knowledge and information have massive direct and indirect impacts on higher education globally.

Motivation plays a significant role for learners in their struggle for brilliance and excellence in performance by means of Learner Engagement (Malini S., 2020). It is

¹⁶⁷ Marsh, C. (2000). *Hand book for beginning teachers* (2nd ed.). Australia: Pearson Education.

now an absolute necessity for teaching behaviours to include usage of high levels of relatedness support from the start of the lessons (teachers' enthusiasm, energy, empathy and attention). There is a need for the teachers to motivate and engage learners early on in the lesson, with learning activities and room for experimenting, while observing the learners with patience and providing regular guidance with positive feedback, rationales and support during exercises (Cents-Boonstra *et al.*, 2021). According to SDT (Self-Determination Theory), relatedness support refers to an open, honest and caring attitude that leads to the development of a mutually positive relationship between student and teachers. Higher education offers the potential to support “glonacal” (global, national, and local) development. Higher education learners are an indispensable part of the nation.

Higher education plays an important role in imparting quality education and promoting the economic development of the country. It is considered important for national growth in terms of economy, both as an industry, and as highly skilled and trained human resource producers. To cope up with the changing priorities of the learners in the wake of globalization process, there is a need to review strategies in the higher education sector. Thus, teachers need to create a good learning atmosphere so that learners will have a high Motivation to learn. Parents, Community members also have an important role in learners having high Motivation, which in the end, may lead to high Learner Engagement, and ultimately to high learning achievements.

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- <https://www.simplypsychology.org/self-efficacy.html#:~:text=Psychologist%20Albert%20Bandura%20has%20defined,%2Dbeing%2C%20and%20personal%20accomplishment.>
- <https://www.education.udel.edu/wp-content/uploads/2013/01/MotivatingAcademicLearning.pdf>

Appendices

Appendix A List of Colleges

A] Institutions belonging to the Regular Mode

- Seva Sadan's College of Education
- Thakur College of Architecture
- KLE Society's Science and Commerce College
- Bharati Vidyapeeth's Institute of Management & Information Technology
- Saraswati College of Engineering
- Arun Muchhala International College of Hotel Management
- Indian Aerospace Engineering
- SP Jain School of Global Management
- MES' Pillai College of Education and Research
- Tilak College
- R. K. Talreja College of Arts, Science and Commerce
- Kamladevi College
- V.K. Krishna Menon College
- E. B. Madhvi Senior College
- SIES College of Arts, Science and Commerce
- Nirmala College, Mumbai University
- L. D. Sonawane College
- SST College
- P. D. Karkhanis College Arts and Commerce
- HOC Pillai College of Arts Commerce and Science
- J S M's Shantarambhau Gholap Arts, Science, And Gotirambhau Pawar Commerce College, Shivle
- K. B. College Of Arts and Science for Women
- ITM Group of Institutions
- E. B. Madhvi College
- Manjunatha College of Commerce
- VPM's K. G. Joshi College of Arts and N. G. Bedekar College of Commerce
- Pillai College of Engineering

- KSA Barns College of Arts, Science and Commerce
- C.K.T. College of Arts, Commerce and Science
- Ramsheth Thakur College of Commerce and Science
- Siddharth College of Arts, Science and Commerce
- C. H. M. College
- B. K. Birla College
- Model College of Science and commerce
- Mulund College of Commerce (MCC)
- B. N. N. College
- S. B. College
- University of Mumbai
- D. Y. Patil School of Pharmacy
- K. J. Somaiya College of Science and Commerce

B] Institutions belonging to the Distance Mode

- IGNOU
- Annamalai University
- Pune University
- IDOL

Appendix B Tool 1: Motivation
Student (Higher Education) Survey

Please read the instructions carefully before starting the survey.

Kindly do not leave any of the questions unanswered as it will render the information collected from you unusable.

The information collected will be confidential and used for research purpose only.

There are three sections to this survey with 56 total questions.

Completing this survey will take approximately 10 minutes.

Section I
Personal Information

Name of the student:

Age:

Gender: Male/ Female/ Other

Course Pursuing:

Stream:

- Arts
- Commerce
- Science
- Engineering
- Management
- Pharmacy
- Other

Mode of Education: Regular / Distance

Name of the College / University / Institution:

Email ID (optional):

Section II-Tool for Motivation

ACADEMIC MOTIVATION SCALE (AMS-C 28)

COLLEGE VERSION

Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, Nathalie M. Brière,

Caroline B. Senécal, Évelyne F. Vallières, 1992-1993

Educational and Psychological Measurement, vols. 52 and 53

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college.

1	2	3	4	5
Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly

WHY DO YOU GO TO COLLEGE?

Sr No.	Statement	1	2	3	4	5
1	Because with only a junior college education I would not find a high-paying job later on.					
2	Because I experience pleasure and satisfaction while learning new things.					
3	Because I think that a college education / higher education will help me better prepare for the career I have chosen.					
4	For the intense feelings I experience when I am communicating my own ideas to others.					
5	For the pleasure I experience while surpassing myself in my studies.					
6	To prove to myself that I am capable of completing my college degree.					
7	In order to obtain a more prestigious job later on.					
8	For the pleasure I experience when I discover new things never seen before.					

9	Because eventually it will enable me to enter the job market in a field that I like.					
10	For the pleasure that I experience when I read interesting authors.					
11	For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments					
12	Because of the fact that when I succeed in college / studies I feel important.					
13	Because I want to have "the good life" later on.					
14	For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.					
15	Because this will help me make a better choice regarding my career orientation.					
16	For the pleasure that I experience when I feel completely absorbed by what certain authors have written.					
17	For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.					
18	To show myself that I am an intelligent person.					
19	In order to have a better salary later on.					
20	Because my studies allow me to continue to learn about many things that interest me.					
21	Because I believe that a few additional years of education will improve my competence as a worker.					
22	For the "high" feeling that I experience while reading about various interesting subjects.					
23	Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.					
24	Because I want to show myself that I can succeed in my studies.					

Appendix C Tool 2: Learner Engagement

Section III-Tool for Learner Engagement

University Student Engagement Inventory (USEI)

João Maroco^{1*}, Ana Lúcia Maroco², Juliana Alvares Duarte Bonini Campos³ and

Jennifer A. Fredricks⁴

Using the response scale, indicate how often the following statements apply to you:

1	2	3	4	5
Never	A few times	Sometimes	Most of the time	Always

Sr No.	Statements	1	2	3	4	5
1	ECP1. I pay attention in class. (O)					
2	EE12. I attend extracurricular activities in my College/University/Institution (concerts, exhibitions, lectures, conferences ...).					
3	ECC22. When I read a book, I question myself to make sure I understand the subject I'm reading about. (O)					
4	ECP2. When I'm in class, I behave as if it was a job. (O)					
5	EE13. I am happy at this College/University/Institution. (O)					
6	ECC23. I study at home even when I do not have assessment tests. (O)					
7	ECP3. I follow the College/University/Institution rules. (O)					
8	EE14. I don't feel very accomplished at this College/University/Institution. (O) (R)					
9	ECC24. I try to watch TV programs on subjects that we are talking about in class. (O)					
10	ECP4. I usually do my homework on time.					

11	EE15. I feel excited about the College/University/Institution's course work. (O)					
12	ECC25. I talk to people outside the College / University / Institution on matters that I learned in class.					
13	ECP5. When I have doubts I ask questions and participate in debates in the classroom.					
14	EE16. I like being at the College/University/Institution. (O)					
15	ECC26. If I do not understand the meaning of a word, I try to solve the problem, for example by consulting a dictionary or asking someone.					
16	ECP6. I usually participate actively in group assignments.					
17	EE17. I am interested in the College /University/Institution's work. (O)					
18	ECC27. I check my homework to correct for errors. (O)					
19	ECP7. I usually go to class without having read the materials recommended by my teacher.					
20	EE18. I usually talk to teachers about my professional interests/career.					
21	ECC28. I try to integrate the acquired knowledge in solving new problems.					
22	ECP8. I have problems with some teachers at College/University/Institution. (O)					
23	EE19. My classroom is an interesting place to be. (O)					
24	ECC29. I read other books or materials to learn more about the subjects we discuss in class. (O)					

25	ECP9. I have problems with other classmates.					
26	EE20. I get involved in extracurricular activities with other members of the College/University/Institution's community outside of the classroom (cultural groups, student associations, sports groups).					
27	ECC30. If I do not understand something I read, I go back and read it again.					
28	ECP10. I ask for help from classmates when I do not understand any of the materials of classes.					
29	EE21. I discuss with my classmates about possible ways to improve our coursework/ College/University/Institution.					
30	ECC31. I review my notes/ materials after the College/University classes.					
31	ECP11. I help classmates when they ask me to explain subjects I understand well.					
32	ECC32. I try to integrate subjects from different disciplines into my general knowledge.					

Appendix D Requisition Letter



Dr. Pillai Teachers Training & Research Centre
Plot.1, Sector 8, Khanda Colony,
New Panvel - 410206 Tel: 2748 0289, 2748 1864
Fax: 2746 4161
NAAC Accredited 'A' Grade

MAHATMA EDUCATION SOCIETY'S

PILLAI
COLLEGE OF
EDUCATION & RESEARCH

PCERP/M.Ed./418/2021

Date: _____

To
The Principal

Sub: Request for Data Collection

Sir/Madam,

_____ is currently doing his/her M.Ed. from
our college. As part fulfillment of the syllabus she/he has to conduct an educational
research. The topic of the research is _____

I humbly request you to permit our student to collect the data from your esteemed
institution (i.e. from teachers/students) via online/offline mode.

Kindly give permission for the data collection.

Thank you,

Yours truly,


Dr. (Ms.) Sally Enos
PRINCIPAL
MAHATMA EDUCATION SOCIETY'S
Pillai College of Education & Research
Dr Pillai Teacher Training & Research Centre
Plot No 1, Sector-8, Khanda Colony,
New Panvel-410 206.