

The Effect of Professional Competencies on Job Performance: A Literature Review

Cao Jie*, Nur Naha Abu Mansor, Beni Widarman Yus Kelana

Abstract--- *Professional competencies play an essential role in improving employee's job performance. However, previous studies neglect the effect of competency components, namely knowledge, skills, traits, motives and self-concept on job performance. Therefore, this paper aims to give an overview of the effect of professional competencies and its constructs on job performance through reviewing previous literatures. A conceptual model is proposed on the basis of literature review. And the finding reveals that whether professional competencies and its construct can affect job performance in different situations is still need to be confirmed.*

Keywords--- *Professional Competencies, Job Performance, Professional Competencies Constructs.*

I. INTRODUCTION

Professional competencies are individuals' underlying characteristics that will affect their performance in a specific job and can distinguish employees with excellent performance from those with mediocre performance [1]–[3]. With the development of social economy, the importance of competency in the fierce market competition is becoming more obvious. It plays a vital role in job performance, and the level of job performance finally determines the future development direction of enterprises [4]. Their relation can be confirmed through the theory constructed by Lyle Spencer and Signe Spencer, who stated that competency is a deep part of an individual's personality and can predict a wide range of behaviors and performance at work, which may include knowledge, skills, traits, self-concept and motives [5]. Meanwhile, it is also further studied by Jin, Fang, Yang and Liu, and Saragih, Sanusi and Manan [6], [7]. However, previous studies only concentrated more on the effect of entire competencies to job performance [8]–[10], neglecting the relationship between the components of professional competencies and job performance. Therefore, this study aims to fill in this gap and gives an overview of the effect of professional competencies and its constructs on job performance through reviewing previous literatures, which can provide suggestions for policy makers that in order to improve employee's job performance, more attention can be paid to individuals' competencies.

II. LITERATURE REVIEW

2.1 Professional Competencies

Lyle Spencer and Signe Spencer defined competencies as an “underlying characteristic of an individual that is causally related to criterion referenced effective and/or superior performance in a job or situation” [5]. An underlying characteristic points to motives, traits, self-concept, knowledge in a certain field or skills that can significantly distinguish between excellent and general performance [5], [11], [12].

*Cao Jie, Azman Hashim International Business School, Universiti Teknologi Malaysia.
Xiangnan University, Hunan, China.*

Nur Naha Abu Mansor, Azman Hashim International Business School, Universiti Teknologi Malaysia.

Beni Widarman Yus Kelana, Azman Hashim International Business School, Universiti Teknologi Malaysia.

Knowledge is the organization and use of information that is useful in a particular occupation [13]. It refers to the specialized knowledge needed in a certain professional field [5], [14], [15]. For example, teachers should master teaching knowledge and the professional knowledge of their specialty; nurses should obtain the knowledge of nursing.

Skills mean the ability to master and apply specialized technologies in order to finish a certain work [5], [15]. For instance, managers should have writing skills and computer applications; actors should master the knowledge and ability of performing. The working skills possessed by employees can enable employees to have a deeper understanding of their work responsibilities and how to efficiently complete their daily work tasks and perform well [16].

Traits refers to the individual's reaction mode, tendency and characteristics to the external environment and various kinds of information [5], [15]. Parks-Leduc, Feldman, and Bardi considered that traits are a description of people's stable behavioral patterns, thoughts and emotions [17]. For example, introverted or extroverted, emotional stability and etc. are all traits. Traits can make people's behavior show the psychological tendency of persistence, stability and consistency, which will finally have a great impact on their own behavior and job performance [18].

As the Cambridge Dictionary showed, motives is the reason to do something, or something that promote the action [19]. Boyatzis considered that motives involve ideas related to a particular target or topic [14]. Motives refer to the internal driving force that pushes and maintains individuals to take actions to achieve certain goals [5], [15], [20]. In other words, motive is a way of thinking formed in one's mind when one wants to do something, and it is also an idea generated when one makes a certain decision. For example, people with strong achievement motives often set some challenging goals for themselves and try their best to achieve them; people with strong innovation motivation are always thinking about new ideas, etc.

Self-concept refers to "a person's attitudes, values, or self-image" [5], [15]. Self-concept is an individual's understanding of one's own ability and self-value, and also is a certain social image one expects to build. It is a process of sociality and gradualness, which is formed through continuous change in the field of perception [20], [21]. Rosenberg thinks that the self-concept is the sum of the individual's thoughts and feelings towards the self-object, which includes the individual's various views towards himself [22].

2.2 Job Performance

Job performance is used to describe how well a worker fulfills his or her job duties. Performance is essential to employees, employers and the whole organization as it will directly affect the promotion, dismissal and salary of employees and the overall decision-making of the organizations [23]. According to Viswesvaran and Ones, job performance can be defined as a series of actions, behaviors and results that employees participate in or can bring about, which are closely related to organizational goals and contribute to the realization of organizational goals [24]. In other words, the performance of employee can be seen from different angles, the most significant of which is that performance is primarily aimed at the organization's main objectives [25].

Different researches have been conducted to study the relationship between employee performance and other

variables [26]. Chen and Yu conducted a survey on 240 preschool teachers randomly selected from the kindergarten in Xi 'an, and the result showed that the job performance of preschool teachers was above average, with the highest score for task performance and the lowest score for work dedication [27]. Meanwhile, it is also found that the higher the work pressure, the lower the job performance. Sony and Mekoth paid attention to the job performance of frontline employee, who pointed out that the nature of job performance is closely related to the needs of the job, the organization's goals and the behavioral beliefs that the organization values [28]. The result indicated that emotional intelligence and adaptability can positively affect the performance of frontline employee.

After collecting data from 295 managers in Thailand, Siengthai and Pila-Ngarm emphasized that job design and job satisfaction can effectively improve employees' job performance [26]. Results showed a positive relationship among these three variables. Shin, Hur and Kang studied job performance among 250 hotel staffs in South Korea [29]. The research examined the links between corporate social responsibility and employees' job performance, and also the mediators of organization identity and job satisfaction. Findings showed that perceived corporate social responsibility can indirectly and positively affect job performance through organizational identification and then job satisfaction. In addition, Sharma and Dhar explored the impact of affective commitment to job performance of 349 nurses in Indian [30]. It can be found that the direct relationship between affective commitment and job performance of nursing staff is 0.70, which shows a great impact on job performance.

Job performance is one of the most famous discussed terms in the field of organizational psychology [25]. Soodmand and Doosti stated that organizations strive to measure the performance of employees and use the information to construct training and selection programs in order to improve the whole performance of employees [25].

2.3 The Effect of Professional Competencies on Job Performance

Previous literatures indicated that professional competencies can produce a significant effect on job performance [31]–[34]. However, the relationship between the dimensions of professional competencies and job performance has been neglected by researchers. In fact, the components constructed by Spencer and Spencer, Jin, Fang, Yang and Liu, and Saragih, Sanusi and Manan, which include knowledge, skills, traits, motives and self-concept, have close relationship between job performance respectively[5]–[7].

Knowledge is considered as one of the essential factors in achieving competitive advantage and high performance in organizations [35]. Liu, Xia, Jiangyong and Lin held the opinion that the business knowledge of returnee entrepreneurs learned from aboard will enable the established company gaining some competitive advantages which other local entrepreneurs will not obtained, thus can finally improve the organization performance [36].

Rangchian, Mehralian, Vatanpour and Salamzadeh put their research of knowledge and performance to the industry of pharmacy in Iran [37]. The result indicated that the pharmacy achievement can be affected by enhancing the knowledge, skills and behavior. Meanwhile, Groza and Groza paid their attention to salesperson, who considered that the knowledge of salesmen is an essential element which will influence performance, especially the regulatory

knowledge [38]. And the result also supports the forecast, indicating that the regulatory knowledge of salesmen has a positive relationship with sales performance. This is in line with the research of Sujatha and Krishnaveni, who emphasized that knowledge can promote performance with better quality and lower cost through product and process development [39].

Several scholars think that the skills employees possessed are related to job performance. Abas Maripaz, A. Imam and Osman considered that the acquisition of skills had close relationship with task performance, while from the data analysis, part of the skills had a little influence with job performance [40]. However, this is different from Bisconti who held the opinion that some fundamental skills can help employee perform their work well and efficiently [41].

Moghimi, Chamanzamin and Maghsoodi, in the research of fire managers, emphasized that communication skill for fire managers was closely related to the employees' performance [42]. The reason lies on the stronger communication skills they have, the more they can do to support and encourage the subordinate in order to achieve the goals of both personal goals and organization goals, which will finally affect their performance. Meanwhile, Cho, Bonn, Giunipero and Divers paid the attention to the field of purchasing in restaurant, which indicated that there is a positive and significant influence between purchasing skills and the restaurant performance [43].

Meanwhile, other researchers also hold their own opinion about the two variables: traits and job performance. Motowidlo et al. concluded that traits can affect contextual performance by influencing contextual knowledge, skills and habits. In particular, conscientiousness, which is a special personality trait, also impact task performance by influencing task habits [44]. Behling considered that traits is one of the important and useful factors to performance [45]. Oppong et al. held that because of neglecting the importance of traits, many institutions are suffering the situation of dissatisfaction with job and low employee performance [46]. Ghani, Yunus and Bahry did a research in Putrajaya which indicated that the personality traits of leader had a close relationship with their job performance [47].

Motive is an important factor that can boost performance, as motivated employees have the incentive to perform and will always try to do something to improve the job performance [48]. Several literatures also analyze the motives of work and study the relationship between motives and work behavior, work performance, job satisfaction and other variables. Neha Sharma and Avni Sharma conducted a research in the bank of Jaipur. They hold the opinion that employees of their own motives including personal incentives can promote individuals to work hard in order to achieve high performance, so there exists a relationship between motives and performance, especially money become a key factor of motives. Trust, recognition and appreciation by leaders and colleagues, respect from others, and the condition of working place which are also kinds of motives people nowadays realize the importance [49]. Moreover, Afful-broni also concluded that low salaries and lack of motives will reduce performance in universities after doing a research in selected university in Tarkwa [50].

In higher education, motive is also related to job performance. In the research of Zlate and Cucui, the motivational mechanisms in high education lead to the performance of all the staffs [51]. Therefore, the essential

problem in universities nowadays is how to build institutions in order to help staffs get motives so as to achieve high performance. Ren considered achievement motives have a good predictive and explanatory effect on job performance [52]. And the motives to pursue success have no significant effect on job performance, while the motives to avoid failure can significantly predict and explain job performance.

At the same time, self-concept is of great significance to individual's personality and behavior [53]. In the study of Khalaila, who did the research in students, considering that self-concept includes students' attitudes, beliefs and opinions on their own intelligence, skills and performance, and the academic self-concept is highly correlated to the achievement [54]. It is summarized that the higher self-concept is, the higher of the academic performance. This is consistent with the research of Sikhwari, who holds the same opinion that here existed a significant correlation between self-concept and academic performance, and these two variables mutually impact and determine each other [55].

For example, one achieves high academic performance can promote the positive development of self-concept, on the contrary, once fails to achieve high performance can make people feel worthlessness which finally cause an experience of the negative self-concept. Meanwhile, the result of Christoph, Goldhammer, Zylka and Hartig showed that computer self-concept played an important role in the performance results [56]. While in the research of Dockx, De Fraine and Vandecandelaere, the result is different from others. They summary that if the student is in a class with higher academic performance, he will get lower academic self-concept than in the class with low academic performance which is on the basis of big fish little pond theory [57].

Otherwise, some researchers hold the opposite opinion from Dockx et al.. Albert and Dahling, and Parker et al. considered that self-concept can be a critical predictor of academic job performance among students [58], [59]. Liao highlighted that self-esteem, as one of the important self-concept, will encourage personnel to become efficient employees and achieve high performance in the work [60]. This is in consistent with Van Zanden, Marsh, Seaton and Parker, who emphasized that self-concept and performance are complementary and interrelated, so the measures aiming at improving performance should simultaneously reinforce self-concept [61].

Through previous literature, it's easy to say that relevant researches on competencies at home and abroad have yielded fruitful results, especially in the application of modern human resources management. However, there are different views on the relationship between competency constructs and job performance. Some scholars hold the opinion that professional competencies include the five components can significantly affect job performance in different fields, while others state different perspectives. Therefore, researchers still need to investigate the relationship between professional competency constructs and job performance.

III. PROPOSED CONCEPTUAL FRAMEWORK

A conceptual framework can be proposed according to the previous literatures, which can be further studied in the future. The conceptual framework shows the relationship between the components of professional competencies and job performance.

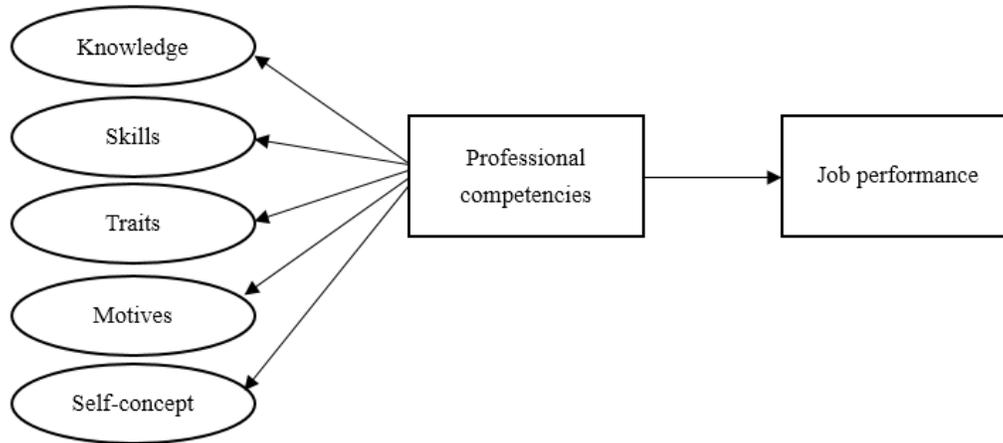


Figure 3.1: Proposed Conceptual Framework

IV. RESULT AND DISCUSSION

Professional competency is manifested as job-related knowledge, skills, traits, motives and self-concept, which is conducive to improve job performance. Even though scholars already studied the relationship between professional competencies and job performance, the effect of competency components on job performance is still need to be confirmed in future research. Thus, a conceptual framework is proposed according to the previous researches, which can be adopted in specific positions to do further research. This study provides a new vision for the performance research, and believes that the employee's job performance can be studied on the basis of competency. In order to improve the job performance of employees, it can consider improving the competency of employees. And the evaluation of job performance can also consider the various elements of competency.

REFERENCES

- [1] S. Bharwani and P. Talib, "Competencies of hotel general managers: a conceptual framework Sonia," *Int. J. Contemp. Hosp. Manag.*, vol. 29, no. 1, pp. 393–418, 2017.
- [2] R. Boyatzis, "Competencies in the 21st century," *Journal of Management Development*. 2008.
- [3] Y. Ma, "An empirical study on the professional values and job performance of college counselors," Dalian University of Technology, 2017.
- [4] L.B. Yoke and S.A. Panatik, "The mediatory role of job satisfaction between emotional intelligence and job performance," *International Business Management*, vol. 10, no. 6. pp. 806–812, 2016.
- [5] L. Spencer and S. Spencer, "Competence at Work For Superior Performance," in *NY: Wiley & Sons Inc*, Wiley, 1993, p. 372.
- [6] J. Jin, G. Fang, J. Yang, and K. Liu, "Study on Competence Model of University Counselor," *J. Wuhan Vocat. Tech. Coll.*, vol. 13, no. 4, pp. 112–116, 2014.
- [7] B. Saragih, A. Sanusi, and A. Manan, "The Influence of Job Satisfaction towards Employee Performance on the Antecedent of Competencies and Organizational Citizenship Behavior," *IOSR J. Bus. Manag.*, vol. 19, no. 01, pp. 21–27, 2017.
- [8] Y. Chen, "On Performance Evaluation of University Instructors Based on Competency," Nanjing University of Aeronautis and Astronautics, 2011.
- [9] X. Dong and L. Ma, "Relationship of Competence and Performance of the Adminidtrative Staff in Higher Education Institutions," *Journal High. Educ.*, vol. 34, no. 10, pp. 22–27, 2013.
- [10] T. Xiao, "Research on Performance Evaluation System of University Fudaoyuan Based on Competency Model," Huazhong University of Science & Technology, 2017.

- [11] L. Wu, Q. Xiong, and P. Liu, "Constructing the Competency Model of Political Instructors in Universities," *J. Ningbo Univ. Sci. Ed.*, vol. 40, no. 1, pp. 82–85, 2018.
- [12] M. Zhang, "Research on Competency Improvement of College Counselors Based on Team Role Theory," Southwest University, 2016.
- [13] W. Lin, C. Shan, and S. Yu, "The Harmonization of Professional Teaching and Professional-Competency Training in Financial Management," *Chinese Stud.*, vol. 03, no. 04, pp. 165–170, 2014.
- [14] R.E. Boyatzis, *The Competent Manager: A Model for Effective Performance*. New York: John Wiley & Sons, 1982.
- [15] V.S. Chouhan and S. Srivastava, "Understanding Competencies and Competency Modeling — A Literature Survey," *IOSR J. Bus. Manag.*, vol. 16, no. 1, pp. 14–22, 2014.
- [16] G.N. Root, "How the Skills of the Employees Affect Their Performance in Relation to Work," *Small Business - Chron.com*. [Online]. Available: <http://smallbusiness.chron.com/skills-employees-affect-performance-relation-work-13557.html>.
- [17] L. Parks-Leduc, G. Feldman, and A. Bardi, "Personality Traits and Personal Values: A Meta-Analysis," *Personal. Soc. Psychol. Rev.*, vol. 19, no. 1, pp. 3–29, 2015.
- [18] Y. Wang, "Research on Entrepreneurial Decision-making and Behavior of College Students Based on Personality Characteristics," *Educ. Vocat.*, no. 19, pp. 70–73, 2018.
- [19] "Meaning of motive in English," *Cambridge Dictionary*. [Online]. Available: <https://dictionary.cambridge.org/dictionary/english/motive>.
- [20] L. Yao, "Research on Performance Evaluation of University Administration Staff Based on Competency," Nanjing University of Science & Technology, 2012.
- [21] F. Shao, "Study on Performance Management Model of University Counselors Based on Competency Model," Chongqing University, 2008.
- [22] M. Rosenberg, *Self-Concept from Middle Childhood through Adolescence*. 1986.
- [23] A.N. Mustapa and R. Mahmud, "The effects of public service motivation on job performance : myth or reality ?," *J. Manag. Stud.*, vol. 2, no. 7, pp. 144–164, 2016.
- [24] C. Viswesvaran and D. S. Ones, "Perspectives on Models of Job Performance," *Int. J. Sel. Assess.*, vol. 8, no. 4, pp. 216–226, 2000.
- [25] H. Soodmand and M. Doosti, "Investigating the impact of job satisfaction dissatisfaction on Iranian English teachers ' job performance," *Iran. J. Lang. Teach. Res.*, vol. 4, no. 1, pp. 97–115, 2016.
- [26] S. Siengthai and P. Pila-Ngarm, "The interaction effect of job redesign and job satisfaction on employee performance," *Evidence-based HRM*, vol. 4, no. 2, pp. 162–180, 2016.
- [27] Q. Chen and Y. Yu, "Research on the Relationship between Occupational Happiness and Job Performance of Preschool Teachers," *J. Weinan Norm. Univ.*, vol. 34, no. 5, pp. 75–82, 2019.
- [28] M. Sony and N. Mekoth, "The relationship between emotional intelligence, frontline employee adaptability, job satisfaction and job performance," *J. Retail. Consum. Serv.*, vol. 30, pp. 20–32, 2016.
- [29] I. Shin, W.M. Hur, and S. Kang, "Employees' perceptions of corporate social responsibility and job performance: A sequential mediation model," *Sustain.*, vol. 8, no. 5, pp. 1–12, 2016.
- [30] J. Sharma and R.L. Dhar, "Factors influencing job performance of nursing staff: Mediating role of affective commitment," *Pers. Rev.*, vol. 45, no. 1, pp. 161–182, 2016.
- [31] M. Mirfan, H. M. Umar Gani, S. Serang, and H. Z. Arifin, "Relation of Lecturer's Competency, Motivation and Utilization of Information and Communication Technologies to Job Satisfaction and Performance," *World J. Bus. Manag.*, vol. 4, no. 1, p. 53, 2018.
- [32] B.C. Renyut, H.B. Modding, J. Bima, and S. Sukmawati, "The effect of organizational commitment, competence on Job satisfaction and employees performance in Maluku Governor's Office," *J. Bus. Manag.*, vol. 19, no. 11, pp. 18–29, 2017.
- [33] A. Jusmin, S. Said, M.J. Bima, and R. Alam, "Specific determinants of work motivation, competence, organizational climate, job satisfaction and individual performance: A study among lecturers," *J. Bus. Manag. Sci.*, vol. 4, no. 3, pp. 53–59, 2016.
- [34] D. Setyadi and A. Sriekaningsih, "The Effect Of Competence And Motivation And Cultural Organization Towards Organizational Commitment And Performance On State University Lecturers In East Kalimantan Indonesia," *Eur. J. Bus. Manag.*, vol. 7, no. 17, pp. 208–219, 2015.

- [35] S.T. Ha, M.C. Lo, and Y.C. Wang, "Relationship between Knowledge Management and Organizational Performance: A Test on SMEs in Malaysia," *Procedia - Soc. Behav. Sci.*, vol. 224, no. August 2015, pp. 184–189, 2016.
- [36] X. Liu, T. Xia, L. Jiangyong, and D. Lin, "Under what institutional conditions does overseas business knowledge contribute to firm performance?," *Int. Bus. Rev.*, vol. 28, no. 3, pp. 588–602, 2019.
- [37] M. Rangchian, G. Mehralian, H. Vatanpour, and J. Salamzadeh, "The Relationship Between Knowledge and Performance: The Case of Iran Community Pharmacies," in *Value in Health*, 2015, vol. 18, no. 7, p. A544.
- [38] M.D. Groza and M.P. Groza, "Salesperson regulatory knowledge and sales performance," *J. Bus. Res.*, vol. 89, no. April, pp. 37–46, 2018.
- [39] R. Sujatha and R. Krishnaveni, "Knowledge creating ba as a determinant of work performance of employees: An empirical analysis among pump manufacturing firms in South India," *Asia Pacific Manag. Rev.*, vol. 23, no. 1, pp. 45–52, 2017.
- [40] M. Abas Maripaz, O.A. Imam, and S. Osman, "Employability Skills and Task Performance of Employees in Government Sector," *Int. J. Humanit. Soc. Sci.*, vol. 3, no. 4, pp. 150–162, 2013.
- [41] A.S. Bisconti, "How college education contributes to job productivity," *New Dir. Educ. Careers*, 1979.
- [42] S.F. Moghimi, M.R. Chamanzamin, and A. Maghsoodi, "The Relationship between Communication Skills and Job Performance of the Employees , Fire Managers of Rasht City," *Relatsh. between Commun. Ski. Job Perform. Employees , Fire Manag. Rasht City*, vol. 3, no. 2, pp. 60–75, 2013.
- [43] M. Cho, M.A. Bonn, L. Giunipero, and J. Divers, "Restaurant purchasing skills and the impacts upon strategic purchasing and performance: The roles of supplier integration," *Int. J. Hosp. Manag.*, vol. 78, no. August, pp. 293–303, 2019.
- [44] S.J. Motowidlo, W.C. Borman, and M.J. Smith, "A Theory of Individual Differences in Task and Contextual Performance," *Hum. Perform.*, vol. 10, no. 2, pp. 71–83, 1997.
- [45] O. Behling, "Employee selection: Will intelligence and conscientiousness do the job?," *Acad. Manag. Perspect.*, vol. 12, no. 1, pp. 77–86, 1998.
- [46] D. Oppong, T. Adjirackor, D. Assiseh, W.G.I. Ansah, F.K.D.E.O. Dark, and E. Charles, "The Relationship between Personality Traits and Employee Performance : The Case of Barry Callebaut Ghana Limited," *Hum. Resour. Manage.*, vol. 89, no. January, pp. 36911–36915, 2015.
- [47] N.M.A. Ghani, N.S.N.M. Yunus, and N. S. Bahry, "Leader's Personality Traits and Employees Job Performance in Public Sector, Putrajaya," *Procedia Econ. Financ.*, vol. 37, no. 16, pp. 46–51, 2016.
- [48] N.S. Mohd Said, A.S.E. Ahmad Zaidee, A.S. Mohd Zahari, S.R.O. Ali, and S. M. Salleh, "Relationship between Employee Motivation and Job Performance: A Study at Universiti Teknologi MARA (Terengganu)," *Mediterr. J. Soc. Sci.*, vol. 6, no. 4, pp. 632–638, 2015.
- [49] N. Sharma and A. Sharma, "Relationship Between Employee Motivation And Performance Of The Employees Working In Retail Sector In Jaipur," *J. Manag. Eng. Inf. Technol.* , vol. 4, no. 2, pp. 10–17, 2017.
- [50] A. Afful-broni, "Relationship between Motivation and Job Performance at the University of Mines and Technology , Tarkwa , Ghana : Leadership Lessons," vol. 3, no. 3, pp. 309–314, 2012.
- [51] S. Zlate and G. Cucui, "Motivation and Performance in Higher Education," *Procedia - Soc. Behav. Sci.*, vol. 180, no. November 2014, pp. 468–476, 2015.
- [52] M. Ren, "Influence of Proactive Personality and Achievement Motivation on Job performance," Ludong University, 2014.
- [53] T. Niu, "Self-concept and Brand Personality Influence on Purchase Intention," Southwest University, 2014.
- [54] R. Khalaila, "The relationship between academic self-concept, intrinsic motivation, test anxiety, and academic achievement among nursing students: Mediating and moderating effects," *Nurse Educ. Today*, vol. 35, no. 3, pp. 432–438, 2015.
- [55] T.D. Sikhwari, "A Study of the Relationship between Motivation, Self-concept and Academic Achievement of Students at a University in Limpopo Province, South Africa," *Int. J. Educ. Sci.*, vol. 6, no. 1, pp. 19–25, 2014.
- [56] G. Christoph, F. Goldhammer, J. Zylka, and J. Hartig, "Adolescents' computer performance: The role of self-concept and motivational aspects," *Comput. Educ.*, vol. 81, pp. 1–12, 2015.
- [57] J. Dockx, B. De Fraine, and M. Vandecandelaere, "Tracks as frames of reference for academic self-concept," *J. Sch. Psychol.*, vol. 72, no. December 2017, pp. 67–90, 2019.

- [58] M.A. Albert and J. J. Dahling, “Learning goal orientation and locus of control interact to predict academic self-concept and academic performance in college students,” *Pers. Individ. Dif.*, vol. 97, pp. 245–248, 2016.
- [59] P.D. Parker, I. Schoon, Y.M. Tsai, G. Nagy, U. Trautwein, and J.S. Eccles, “Achievement, agency, gender, and socioeconomic background as predictors of postschool choices: A multicontext study,” *Dev. Psychol.*, vol. 48, no. 6, pp. 1629–1642, 2012.
- [60] P. Liao, “The Role of Self-Concept in the Mechanism Linking Proactive Personality to Employee Work Outcomes,” *Appl. Psychol.*, vol. 64, no. 2, pp. 421–443, 2015.
- [61] B. Van Zanden, H. W. Marsh, M. Seaton, and P. Parker, *Self-Concept: From Unidimensional to Multidimensional and Beyond*, Second Edi., vol. 21, no. 1976. Elsevier, 2015.