



Human Capital and Psychological Empowerment in the Career Development of Private College Lecturers

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ABSTRACT

Lecturers can achieve professionalism by participating in career development opportunities provided by their educational institution. There are two distinct paths that categorize lecturer careers in higher education. There are two main career paths in this field: structural and functional paths. A university lecturer can choose to specialise in either the structural or functional fields. In addition to its dual nature, an academic career offers significant autonomy and relies on performance as a key factor in shaping future professional paths. This study seeks to examine the impact of human capital and

psychological empowerment on the career development of lecturers in higher education. This research employs the causality model and utilizes SEM (Structural Equation Modelling) as the analysis technique. SEM is implemented using the Moment of Structural Analysis program to test the proposed hypothesis. This research demonstrates a notable impact of human capital and psychological empowerment on the career development of lecturers in higher education. Human capital refers to the amalgamation of an individual's knowledge, skills, expertise, and capacity to effectively perform their responsibilities, thereby generating value to fulfil the objectives of an educator.

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1. Introduction

The profession of a lecturer is highly regarded and esteemed due to its involvement in the advancement and dissemination of knowledge, technology, and art. This is achieved through educational activities, research endeavours, and community engagement (Heri, 2019; Retnowati et al., 2021). To fulfil their duties effectively, lecturers are provided with a career path that includes functional positions and structural careers. A lecturer's career encompasses the various work experiences and activities that occur from the time they join a higher education institution. Career development is crucial for lecturers, as it significantly impacts their level of job satisfaction (Burnette et al., 2020).

Lecturers in Indonesia should prioritize career development as a crucial aspect. Choosing to become a lecturer is a deliberate professional decision that entails a sense of responsibility towards one's career trajectory. Continuing to pursue an academic position demonstrates the lecturer's professionalism (Doo et al., 2020). Employees have a strong desire for career development, as it serves as a significant motivator for their performance. The primary objective of career development in human resource management is to enhance and optimise work performance, enabling individuals to make a greater contribution towards achieving organisational objectives (Prozesky & Beaudry, 2019).

Generally, companies or organizations implement career development for lecturers to ensure the availability of qualified and experienced lecturers when required. This is because career planning and development are highly beneficial for both universities and individuals (Gudkova et al., 2022; Okolie et al., 2020). Support from human capital is essential for career development, as it involves the management and development of human resources to enhance performance and achieve significant objectives. Lecturers possess human capital, which serves as an asset for their higher education institution (Mello, Suutari, & Dickmann, 2023). This capital refers to the employee's knowledge, expertise, and skills. Lecturers who enhance their skills and job performance while actively contributing to university operations will be considered valuable human capital (Liu et al., 2022; Wong et al., 2023).

In addition, the development of a lecturer's career requires more than just human capital. Psychological empowerment involves enabling individuals to utilise their skills, knowledge, experience, and motivation to achieve high levels of performance in their work. Azlan and Wahab (2020) defines psychological empowerment as the enhancement of intrinsic motivation, demonstrated through four cognitive factors that indicate an individual's attitude towards their work responsibilities. The four cognitions encompassed in this framework are meaning, competency, self-determination, and impact. These four variables collectively represent how individuals proactively engage in their work roles.

However, conducting a research study on the impact of human capital and psychological empowerment on the career development of private higher education lecturers holds significant importance (Donald, Baruch, & Ashleigh, 2019). Human capital in the context of a lecturer's career encompasses the knowledge, skills, experience, and other attributes acquired throughout their educational and professional trajectory. According to Marginson (2019), strong human capital enhances a lecturer's career success, reputation, and contributions in teaching, research, and academic development. In

addition, the continuous development of human capital creates opportunities for professional growth and recognition within the academic community (Fatoki, 2011). Psychological empowerment has a notable positive influence on individuals' careers, specifically through increased motivation and commitment. Those who experience psychological empowerment in their professional lives are more inclined to exhibit higher levels of motivation and commitment towards their work. Individuals derive a sense of purpose from their work, which in turn serves as a motivating factor in attaining their professional aspirations (Schermuly et al., 2022; Schermuly & Meyer, 2020). The researcher in this study has identified and merged the prominent factors of human capital, psychological empowerment, and career development. The objective is to present the perspective of private college lecturers on these concepts and their dimensions. A quantitative research strategy was employed to conduct this study.

This research has theoretical advantages, specifically in terms of providing novel ideas for scientific innovation and serving as a foundation and point of reference for future studies on the significance of human capital and psychological empowerment in the professional growth of higher education lecturers. Additionally, it highlights the importance of these three variables in developing strategies to enhance employee engagement, foster loyalty, and minimize turnover.

The researcher has organised the information and empirical knowledge from the literature into different sections. The sections encompass the literature review, presenting an overview of previous research; the methodology, describing the approach used in the study; the analysis and results, presenting the findings of the study; the discussion, exploring the key findings in detail; and the conclusion, summarizing the study's main points and acknowledging its limitations.

2. Literature Review

This study attempts to clarify the impact of human capital and psychological empowerment on the career growth of lecturers. To achieve this objective, the researcher has thoroughly examined numerous current studies and developed the primary hypotheses that will be investigated in this study.

The term human capital refers to the skills and abilities possessed by teachers, which have been identified as a vital aspect of improving students' level of involvement in learning and providing advice for their career development (Onyilo & Shamo, 2017). Researchers have extensively examined the variable in question in the literature, exploring several dimensions and types. Numerous studies have emphasised the significance of this variable by considering its varied dimensions.

A study examined the correlation between human capital and organisational relationships, considering the impact of various characteristics of human capital (such as skills, expertise, abilities, and capabilities) and three dimensions of organisational relationships. The study employed a descriptive questionnaire technique to collect data and found that both the dimensions and the overall human capital had a substantial influence on organisational connections. Therefore, it emphasised the considerable impact of the dimensions of human capital. Regarding employee behaviour and optimal performance (Alkaabi, Naamo, & Fahmi, 2023).

Furthermore, a separate study examined the correlation between communication skills, experience, and motivation in career planning. The study revealed noteworthy findings on the impact of communication skills on career planning (Fahmi & Ali, 2022). Additionally, another study investigated the importance of human capital capabilities and revealed that developing and refining these capabilities in young learners can serve as a valuable tool to enhance their adaptability and ability to navigate career demands and the process of career development (Goitom, 2023). Aside from human capital factors, research has highlighted the importance of a teacher's creativity and mental well-being in their professional development. These are intricate yet resilient aspects that educational institutions must support to maintain high levels of teacher performance, ensuring minimal impact on student learning (Autin et al., 2020).

In the realm of mental well-being, psychological empowerment is considered a crucial and well-studied aspect of professional growth. Psychological empowerment refers to the result of an individual's perception, competence, sense of significance, self-determination, and ability to influence the outcomes of an organization (Malik, Sarwar, & Orr, 2021). Psychological empowerment is the result of various variables that collectively contribute to its overall development. Studies have also provided insight into the dimensions and variables included in their empirical models. In this context, a study has defined psychological empowerment as a state of motivation and examined its correlation with work engagement. The study emphasised that individuals with motivated and positive mindsets are more likely to demonstrate increased engagement and commitment to their job, leading to enhanced career or work performance (Monje-Amor et al., 2021).

A recent study investigated the relationship between the drivers of psychological empowerment. The researcher examined the relationship between emotional intelligence, protean career attitudes, psychological empowerment, and subjective career success. The study also assessed the characteristics of these variables within this chain of connections. The analysis of the study yielded important findings about the dimensions of psychological empowerment, specifically self-determination and competency. Additionally, it revealed a noteworthy impact of psychological empowerment on the attainment of successful jobs (Aydogmus, 2019).

Furthermore, a separate study examined the explicit impact of psychological empowerment, as well as emotional and cultural intelligence, on both subjective and objective job success. The study also assessed the direct connections between these factors, considering the moderating effect of gender. The study employed multiple regression analysis and found that psychological empowerment and emotional intelligence have a direct and significant positive impact on career success. Further, the study emphasised the explanatory role of psychological empowerment in promoting career success and effective development (Sherman, 2022).

In addition, a recent study conducted quantitative research to examine the relationship between professional identity, career satisfaction, psychological empowerment, and work engagement. The study found strong empirical evidence supporting the interconnection between these variables. Specifically, the study highlighted the significant relationship between psychological empowerment and work engagement, as well as the relationship between work engagement and career satisfaction. The findings suggest that psychological empowerment plays a dual role in supporting work-related factors such as engagement, expertise, and performance, as well as satisfaction in the teaching career (Sun et al., 2022).

Therefore, utilizing the provided empirical facts, the researcher has established a connection between the variables of interest and has formulated hypotheses to represent their interactions.

H1: *The Psychological empowerment has a positive and significant relationship with the career development.*

H2: *There Is a significant Influence of the human capital in determining the career development of the lecturers.*

The researcher has designed the following empirical model for Investigation:

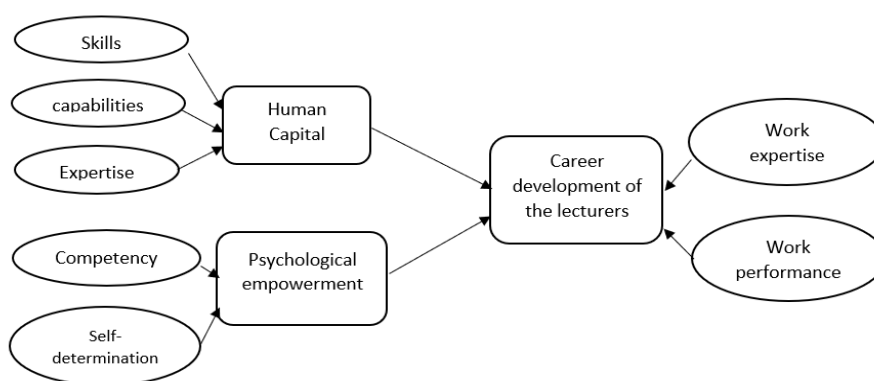


Figure 1. *The empirical model of the Study.*

3. Method

3.1. Research Design

The objective of this study is to investigate the impact of human capital and psychological empowerment on the career advancement of professors in higher education. To assess the specified casualties, the researcher has employed a quantitative research strategy using a deductive approach, which involves formulating specific hypotheses derived from the theory. The researcher has chosen the private universities in the educational sector of Indonesia as the specific focus for data collection. The researcher focused on the lecturers as the unit of analysis and employed a physical, self-administered data collection approach to capture the perceptions of the respondents, as indicated by the research hypothesis. The researcher has obtained ethical approval and obtained prior agreement from the university management before collecting the data. This was done to ensure the objective of the data collection and establish trust and comfort among the targeted respondents. Additionally, the researcher obtained the data through the willing involvement of the respondents, without any coercive measures to compel them to complete an answer sheet.

3.2. Participants

The research study involved lecturers from private universities, specifically those from PGRI Adi Buana University in Surabaya. The researcher sought a total of 122 respondents who provided legitimate responses for this study. The researcher selected the participants for this study based on a careful evaluation of the topic, aims, hypotheses, techniques, and research instruments.

Therefore, the researcher utilised the probability sampling technique to select respondents from the target population. This ensured that the exact number of respondents was known in advance. The random sampling technique was employed to give all respondents an equal opportunity to participate in the study and complete the questionnaire.

3.3. Instruments

The research used a questionnaire as the primary tool, which employs a Likert scale. The Likert scale response options consist of the following: strongly agree, agree, uncertain, disagree, and strongly disagree. The instruments used for the Human Capital variable are based on [Gaol and Jimmy \(2014\)](#) theory and utilise specific indicators. (1) Aptitude, (2) Proficiencies. Simultaneously, the Psychological Empower variable refines and adapts the Spreitzer theory indicators, which were initially assembled in 1995 ([Spreitzer, 1995](#)), encompassing the indicators of (1) Competence and (2) Self-determination. In addition, lecturer career development utilises the metrics proposed by [Salbiyah et al. \(2019\)](#), which include (1) Work Achievement and (2) Work Experience. The study instrument was disseminated to participants through the utilisation of Google Forms in an open manner.

3.4. Data analysis

Researchers employed Structural Equation Modelling (SEM) using the software programs AMOS and SPSS for data processing and analysis. The utilisation of Structural Equation Modelling (SEM) in this study is justified by its superior accuracy. SEM enables researchers to not only ascertain the interrelationships between variables but also to identify the constituent elements of these variables and determine their respective magnitudes. Subsequently, the model's appropriateness is assessed by analysing different measures of goodness of fit to determine the degree of correlational validity. Afterwards, the researchers employ factor analysis, a statistical technique used to examine the relationships between variables that are believed to be interrelated. Factor analysis examines the relationships between variables that are believed to be interrelated using a statistical technique. The research employs EFA (Exploratory Factor Analysis) and CFA (Confirmatory Factor Analysis) for factor analysis. The EFA analysis involves making predictions and then developing a more intricate pattern. EFA is commonly employed in situations where researchers lack prior information or need to categorise hypotheses into variables based on a set of indicators. Researchers begin by using indicators (manifests) to create variables. Researchers commonly apply EFA in situations where the indicators of the latent variable are not clearly defined. Indicators of one latent variable can sometimes overlap with indicators of other latent variables. Meanwhile, the CFA will assess the consistency of indicators grouped according to their latent variables (constructs). In CFA, researchers begin with the assumption that the indicators are grouped into specific latent variables, setting it apart from EFA.

4. Results

4.1. Descriptive statistics

The objective of this study is to examine the impact of human capital and psychological empowerment on the career development of lecturers in higher education. The descriptive research statistics can be found in [Table 1](#).

Table 1*Descriptive statistics*

	Min	Max	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Capability (X1.1)	24	40	32.81	3,065	9,397	,240	,968
Skills (X1.2)	25	45	34.81	3,410	11,631	-.296	,437
Expertise (X1.3)	22	40	32.60	3,595	12,927	,007	,301
Competence (X2.1)	35	64	47.86	7,666	58,772	,399	,707
Self-determination (X2.2)	24	40	31.62	3,630	13,173	.173	,787
Work performance (Y1)	40	70	57.37	6,429	41,333	,158	,320
Work experience (Y2)	37	80	62.39	9,551	91.214	.024	,579

The output [Table 1](#), which presents descriptive statistics, provides key measures to analyse the data obtained from respondents. Descriptive statistics provide key measures to analyse the data obtained from respondents. It includes the minimum value, maximum value, average value, and standard deviation, as well as measures of skewness and kurtosis to assess the normal distribution of the data. Skewness and kurtosis are statistical measures used to analyse the shape of a data distribution. Skewness quantifies the asymmetry of the data, while kurtosis measures the peakedness of the distribution. Data is considered normally distributed when its Skewness and Kurtosis values approach zero. The available data suggests that the informant data for this research follows a normal distribution.

4.2. Model Fit Test (Goodness of Fit Test)

The model suitability test involves comparing the suitability criteria with the calculation results to determine its accuracy. In the "Model Fit" section of the text output in Amos, like path analysis, you can find the calculations for the fit test parameters. Here is a summary of the model suitability test results in [Table 1](#).

Table 2*Absolute Fit Measure*

<i>Goodness-of-Fit</i>	<i>Cut-off Value</i>	<i>Model test results</i>	<i>Model fit description</i>
<i>p-value (Sig.)</i>	>0.05	0.190	<i>Good fit</i>
<i>Chi-Square/df</i>	≤ 3	1,041	<i>Good fit</i>
GFI (Goodness of Fit)	≥ 0.90	0.912	<i>Good Fit</i>
RMSEA (Root Mean square Error of Approximation)	≤0.08	0.096	<i>Good Fit</i>
RMR (Root Mean Square Residual)	≤ 0.05	0.010	<i>Good Fit</i>

Referring to the data presented in [Table 2](#), Measure of Absolute Fit Goodness of fit criteria evaluate the adequacy of a model, as each criterion in the absolute fit indices represents a measure of goodness of fit. In summary, the goodness of fit test for the Confirmatory Factor Model indicates that the research data aligns with the research model.

The output [Table 3](#) displays the incremental fit measure. The suitability of a model can be assessed using goodness-of-fit criteria. These criteria, known as Incremental Fit Measures, provide an effective way to evaluate the model. In summary, the goodness of fit test for the Confirmatory Factor Model indicates that the research data aligns with the research model.

Table 3*Incremental Fit Measure*

<i>Goodness-of-Fit</i>	<i>Cut-off Value</i>	Model test results	Model fit description
AGFI (Adjusted Goodness of Fit Index)	≥ 0.90	0.925	<i>Good Fit t</i>
CFI (Comparative Fit Index)	≥ 0.90	0.967	<i>Good Fit</i>
Incremental Fit Index (IFI)	≥ 0.90	0.968	<i>Good Fit</i>
Relative Fit Index (RFI)	≥ 0.95	0.870	<i>Good Fit</i>

Table 4*Parsimonious Fit Measure*

<i>Goodness-of-Fit</i>	<i>Cut-off Value</i>	Model test results	Model fit description
PNFI (Parsimonious Normed Fit Index)	Must be small	0.780	<i>Marginal Fit</i>
PGFI (Parsimonious Goodness of Fit Index)	Close to 1	0.630	<i>Marginal fit</i>
AIC (Akaike Information Criterion)	<462,000	304,772	<i>Good Fit</i>
CAIC (Consistent Akaike Information Criterion)	<1536,725	422,726	<i>Good Fit</i>

The results from [Table 4](#) indicate that approximately half of the criteria demonstrate favourable values. However, there are still some model test requirements that fall below the standard, although they are the closest values to the standard. In addition, the results of the model suitability test indicate that the SEM model is presented in [Table 5](#).

Table 5*Results of Theoretical Testing*

			Estimate	S. E	CR	P	Label
Lecturer Career Development (Y)	<---	Human capital (X1)	1,000				
Lecturer Career Development (Y)	<---	Psychological Empowerment (X2)	-.737	.262	-2,815	.005	par_5
Capability (X1.1)	<---	Human Capital (X1)	1,000				
Skills (X1.2)	<---	Human Capital (X1)	1,289	.102	12,656	***	par_1
Expertise (X1.3)	<---	Human Capital(X1)	1,242	.106	11,714	***	par_2
Self-determination (X2.2)	<---	Psychological Empowerment (X2)	1,000				
Competence (X2.1)	<---	Psychological Empowerment (X2)	1,221	.270	4,522	***	par_3
Work performance (Y1)	<---	Career Development (Y)	1,000				
Work experience (Y2)	<---	Lecturer Performance Career Development (Y)	1,694	.244	6,942	***	par_4

Referring to the regression weights presented in [Table 5](#), All question items have a P-value of *** = 0.000 ≤ 0.05, indicating the validity of the theoretical testing results. Additionally, all variables are considered influential, as each has a P-value ≤ 0.05 namely:

- 1) Psychological Empowerment (X2) has a significant effect on career development (Y) with a significance of 0.005 ≤ 0.05
- 2) Human Capital (X1) has a significant effect on Skills (X1.2) with a significance of 0.000 ≤ 0.05

- 3) Human Capital (X1) has a significant effect on Expertise (X1.3) with a significance of $0.000 \leq 0.05$
- 4) Psychological Empowerment (X2) has a significant effect on Competence (X2.1) with a significance of $0.000 \leq 0.05$
- 5) Career development (Y) has a significant effect on work experience (Y2) significance $0.000 \leq 0.05$

Next, we will explore the impact of measurement and structural models on the career development of lecturers in higher education. Specifically, we will examine how human capital and psychological empowerment play a role in this process.

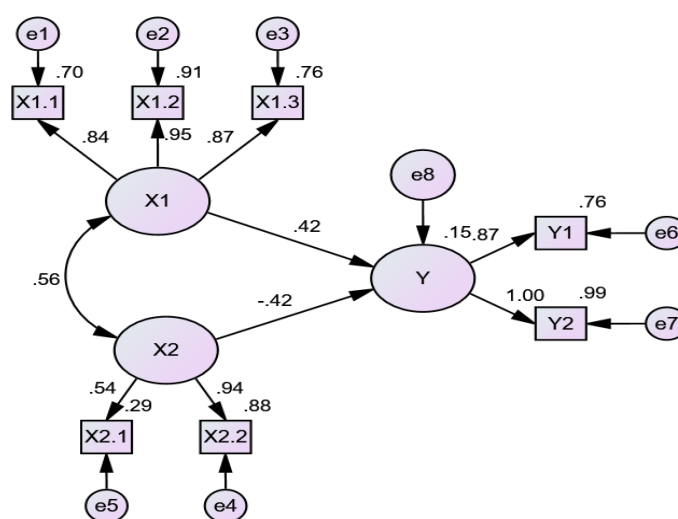


Figure 2. Measurement and Structural Models

5. Discussion and Conclusion

The research findings indicate that all question items were valid, as the P value of $0.000 \leq 0.05$ demonstrates. Furthermore, all variables exhibited a significant effect, with each demonstrating a P value ≤ 0.05 . This research holds significant value as it delves into the relationship between human capital, psychological empowerment, and career development for lecturers in higher education. As a lecturer, it is essential to be proactive and self-reliant in acquiring knowledge to enhance the accreditation of your study programme and university. A lecturer must strive to enhance their professional development by prioritising the advancement of their role in supporting scientific research, innovation, and academic scholarship.

It is essential for universities to effectively manage and enhance their human resources to benefit from the expertise and dedication of professional lecturers who have excelled in their careers. The success of a university relies not only on technological superiority but also on financial resources (Hamadamin & Atan, 2019; Suh et al., 2019). However, the human resources component holds utmost significance. Human resources are crucial in all university activities, although advancements in technology have led to the replacement of labour and its associated advantages (Coleman, 2007; Gomollón-Bel, 2019; Todericiu & Şerban, 2015).

The acquisition of human capital through education and on-the-job training is closely tied to increasing the performance and professional development of lecturers at private universities in Indonesia, thereby bolstering work experience. Having a strong human capital is crucial for supporting the production of goods and services and enhancing productivity (Arokiasamy et al., 2023; Fatoki, 2011). Human capital plays a crucial role in the production process, as it serves as an asset for companies aiming to enhance organisational performance in the field of higher education. The concept of Human Capital encompasses the collective expertise, skills, competencies, attitudes, behaviours, and personal experience possessed by a lecturer (Hamadamin & Atan, 2019). The concept of structural capital involves the utilisation and expression of human resources as employees fulfil their roles to enhance the organisation's revenue and overall appeal.

Human capital refers to the intangible skills and knowledge possessed by individuals, which can be utilised to generate value for both of them and the organisation (Hamadamin & Atan, 2019). Acquiring more knowledge through training and education enhances a lecturer's performance. Education is a valuable investment for lecturers, resulting in increased productivity. The efficiency of higher education performance lies in human resources, specifically human capital (Hamadamin & Atan, 2019; Kianto, Sáenz, & Aramburu, 2017). Effective management of human resources is crucial for leveraging the potential of individuals and elevating the status of higher education institutions on a global scale. The effective use of human resources, specifically human capital, is crucial to attaining the objectives of the university (Sadq et al., 2020).

The relationship between human capital and psychological empowerment plays a significant role in shaping a lecturer's career. By incorporating psychological concepts such as control and autonomy, individuals can enhance their level of knowledge, skills, and work experience. This, in turn, leads to improved employee performance, the production of high-quality human resources, and the achievement of higher education goals (Bose, Patnaik, & Mohanty, 2021; Iqbal et al., 2022).

5.1. Conclusion

The study aims to investigate the association between psychological empowerment, human capital skills, and career development. The researcher used various indicators or sub-dimensions to measure the interconnection of these variables. The researcher utilised the principles of quantitative research methodology to achieve their objective. They selected private university lecturers as their target population using a simple random sampling technique. Based on an analysis of 122 valid responses, the researcher discovered significant associations between the independent and dependent variables of career development. Based on the findings, the researcher concluded that the human capital aspects and psychological stability of private lecturers play a crucial role in enhancing and refining their career development, specifically in terms of work performance and experience.

5.2. Significance of the study

This study has focused on important variables in its empirical model and has provided implications that will be useful for researchers and practitioners in understanding and extending the literature. The researcher has provided a comprehensive analysis of the theoretical and practical contributions under the following headings:

5.2.1. Theoretical Significance of the Study

This study has made a significant contribution to the literature by examining the relationship between human capital, psychological impact, and career development within a single empirical framework. In addition, the researcher has made original contributions by examining the sub-dimensions that reflect the overall impact of the variables under investigation. This study has provided valuable insights for scholars in the field of education. It explores the teachers' perspective on the importance of psychological empowerment and its impact on their mental well-being.

Specifically, it examines the dimensions of competence and self-determinant factors. This study further discussed the significance of human capital traits or qualities as key factors in improving the career development and performance of lecturers. This study has provided a comprehensive understanding of career development among private university lecturers, specifically focusing on work-based factors. It offers a unique perspective on the subject, shedding light on the construct of career development in this context.

5.2.2. Practical Contributions of the Study

This study has addressed both theoretical and practical aspects. The study has emphasised the potential impact of human capital on career development and work performance. It suggests that universities should recognise the significance of human capital and provide support to lecturers in improving their teaching quality. This can also serve as a means of enhancing the university's reputation among students and wider society. Furthermore, it is crucial for practitioners, policymakers, and university administrators to study the importance of psychological empowerment in improving the well-being and performance of lecturers. They should strive to create a positive and supportive environment that fosters the career development of teachers, ultimately contributing to the enhancement of the university's reputation.

5.3. limitations of the Research

The researcher observed or experienced certain limitations throughout the research process of this study. Firstly, it is important to note that this study is limited by the small sample size used for analysis. A small sample size may limit the generalizability of the findings in this study. Furthermore, this study acknowledges a limitation in the generalizability of the collected data. As outlined in the methodology section, the study focused solely on one university for data collection, neglecting the inclusion of other private universities. This study has provided a comprehensive analysis of the variables' impact, focusing on their individual dimensions. However, it has not considered the overall impact of the targeted variables on career development. The study has primarily focused on the viewpoints of the lecturers regarding the addressed variables. However, it has not presented any empirical evidence regarding the influence of other management viewpoints on the enhancement of career development and work performance.

5.4. Researcher Suggestions and Recommendations for Future Studies

The researcher has provided a set of valuable suggestions, roadmaps, and recommendations that can serve as a guide for future researchers. This study has

examined a small number of participants, suggesting that future research should aim to gather a larger sample size to explore the variables in question more comprehensively. This would contribute to the existing literature by providing more robust implications. In future studies, researchers can consider accessing multiple universities for data collection to enhance the generalizability and diversity of the collected data. Furthermore, researchers can enhance the concept by incorporating both online and physical data collection methods. Further research can provide additional insights into the variables examined in this study and expand upon the empirical model by exploring the dimensions as explanatory variables. Researchers can further investigate the applicability of the current evaluated model in different population and demographic settings, as well as in other sectors. Further investigation of the applicability of the current evaluated model in different population and demographic settings, as well as in other sectors, will strengthen the overall validity of the empirical model presented in this study.

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6.1. Declaration of Conflicting Interests

The authors have stated that they have no conflicts of interest regarding the research, authorship, and publication of this article.

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