



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

APRIL 2026, VOLUME 14, ISSUE 2, 1-26  
E-ISSN NO: 2289 – 4489

## NAVIGATING POST-PHD CAREER TRANSITIONS: SELF-LEADERSHIP AND INSTITUTIONAL SUPPORT AMONG ALUMNI OF A MALAYSIAN PUBLIC RESEARCH UNIVERSITY

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### ABSTRACT

Higher education institutions around the world have experienced significant changes as a result of the growth of PhD programs. However, the lack of opportunities for academics to secure employment within academia has created problems for many PhD graduates. While there has been a growth in the number of PhD graduates in public research universities in Malaysia, the training of these graduates in relation to employment in a variety of careers has not received the focus that it deserves. Following the graduation of PhD programs, many universities will begin to investigate how their graduates begin to navigate their careers within the first year of establishing themselves in their careers. The interview of 15 PhD graduates from disciplines including education, science, engineering, business and accounting, and languages and linguistics has revealed the different paths that these graduates followed in their attempts to establish careers outside of academia. The various disciplines within the PhD programs at these public universities in Malaysia appear to have had an impact upon the types of careers that their graduates selected. Graduates from STEM and business programs have a higher percentage of establishing careers outside of academia than graduates from programs in education and languages. Although many of these graduates followed paths that were initiated by their fields of study, each graduate exhibited some level of agency in the career choices that they made. These graduates initiated careers as self-leaders to establish themselves in the careers that they pursued. While these graduates were well-educated in their disciplines, they reported a lack of careers and employment structures within their universities. The integration of Career Construction Theory, Social Cognitive Career Theory, and Self-Leadership Theory allows for an understanding of the relationship between these graduates' choices in careers, their fields of study, and their universities' lack of career preparation for PhD students. Overall, these findings create a discussion regarding the need to introduce career development structures within PhD programs. PhD programs in public research universities in Malaysia and other similar nations can apply these findings to improve the career lives of their graduates.

**Keywords:** Doctoral education, self-leadership, career transition, graduate employability, higher education management, Malaysia.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## INTRODUCTION

The typical view of doctoral education has always been in relation to preparing doctoral graduates for academic careers. For much of the last few decades, universities have provided PhD degrees to students as a means of preparing them for careers within academia (McAlpine, 2014). In academia, PhD graduates can work as teachers, earn research grants, and teach other graduate students to expand the knowledge within their field of study. However, the academic career landscape for PhD graduates has considerably changed over time. There are increasing challenges to securing employment in academia across the world (Chen, 2021; Skakni et al., 2026). PhD graduates are struggling to find employment in academia due to both increasing global competition for those academic positions, as well as because there are a limited number of positions available within academia that can provide tenure to PhD graduates (McAlpine, 2016). As a result, many PhD graduates are entering careers outside of academia. Within Malaysia, public research universities have increased both the number of PhD students that enrol in the degree, as well as have increased their internationalisation efforts to expand the number of international students that attend those public research universities (Wong, 2017). However, there is currently a lack of research regarding how well the degree prepares students for careers outside of academia, and in particular, for the transition period that occurs after earning a PhD. Most existing research into PhD programs evaluates the number of students that successfully earn their degrees from those public research universities (McAlpine, 2020). While this is important metrics to evaluate for the success of the research university's doctoral programs, it does not provide an adequate understanding of the experiences of PhD graduates post-degree. More specifically, there is a lack of research regarding the experiences of alumni of public research universities in Malaysia, particularly in relation to their early careers post-PhD. In contrast, international research indicates that the career aspirations of PhD students tend to change throughout the PhD program (Etmanski, 2020; McAlpine & Emmioğlu, 2015). While many students begin their PhD programs with the intention of pursuing academic positions, the majority of PhD graduates eventually transition into non-academic careers. These career transitions are rarely straight forward or easy for PhD graduates, and instead often involve a certain level of uncertainty about the careers that are possible post-PhD, as well as challenges in navigating careers outside of academia that do not have the same requirements as academic careers (Li & Horta, 2024). Thus, it is important to understand beyond the capabilities and requirements of PhD programs how the graduates of those programs experienced their transition into their early careers. Such a study into the experiences of 15 doctoral graduates from five different disciplines within a public research university in Malaysia will gain an understanding of the experiences of those alumni within their first careers after earning their PhD degrees. Specifically, the study will pay attention to any experiences regarding uncertainties within their careers post-PhD, any challenges that they encountered in their first careers, and any experiences with the support that they felt that the public research university provided to itself and its alumni during their PhD programs and after they earned their degrees. Furthermore, by reviewing the experiences of doctoral graduates from different academic disciplines within the same public research university, such a study can also help to determine if there are differences in the experiences of alumni based upon their field of study. Overall, such a study will help to highlight the importance of considering the experiences and perspectives of alumni of public research universities as a means of gaining insights into the strengths and areas for improvement within the current structure of doctoral programs and their ability to provide graduates with a competitive edge within the current employment landscape.

## LITERATURE REVIEW

### *Diversification of Post-PhD Career Pathways*

This study explores the experiences of 15 doctoral graduates from five different academic disciplines at a Malaysian public research university. By listening to the experiences of these alumni, the study aims to explore their experiences specifically in relation to their early careers after obtaining their PhD. Furthermore, the research intends to investigate how these alumni experienced their post-PhD career support from the university itself.

In comparing the experiences of graduates from each of these different disciplines, the study can gain an



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

understanding of the differences in their career pathways, based upon their areas of study. Thus, by exploring the experiences of these alumni, it becomes possible to understand the importance of hearing these individuals' voices when discussing the quality of doctoral education programs overall. Their experiences can provide valuable information regarding whether or not doctoral education programs are effectively preparing their graduates for the job market and beyond.

## ***Identity Reconstruction***

The career pathway that a doctoral graduate selects after obtaining their degree is not simply a matter of finding a job that matches their skills and interests. For most individuals who pursue doctoral education programs, their careers during their doctoral studies are typically defined by academic positions within their fields of study. Such an academic habitus can create difficulties for doctoral graduates looking to careers outside of academia (Galimberti, 2023). Furthermore, for doctoral graduates who are international students, there may be additional difficulties emerging from relocating to a new country to pursue these non-academic careers (Adhikari & Bastola). Thus, understanding the role of identity in doctoral careers is crucial to understanding how these graduates navigate their careers post-PhD degree.

## ***Disciplinary Opportunity Structures***

Furthermore, not all doctoral graduates experience the same degree of career opportunities after receiving their degrees. For instance, graduates from STEM or business related disciplines have more opportunities for employment outside of academia than graduates from fields like the humanities or education related disciplines (Hatt et al., 2024; Zhang et al., 2025). The reasons for these differences is correlated with the opportunities within each of these different academic disciplines. Within some fields, moving out of academia into industry positions is viewed as an accomplishment, while for other disciplines such a career shift may be viewed as a negative deviation from the expected career of a graduate with a PhD.

Although some changes are occurring in regard to encouraging graduates from various fields to enter non-academic careers, the structures for such careers are not yet equally available to all doctoral graduates (Zhang et al., 2025). Thus, the degree of success of doctoral graduates in finding non-academic employment post-PhD is in part based upon the structure of their field of study. Consequently, understanding and reviewing the differences in opportunity structures among various fields of study is essential to understanding their graduates' experiences.

## ***Self-Leadership and Career Adaptability***

Furthermore, beyond the structures of careers available outside of academia, there are also considerations of the individual characteristics of the doctoral graduates themselves. For instance, career adaptability is a topic that has been studied in relation to doctoral graduates with the intention of understanding the individual steps of which they can take advantage of their earned degrees (Chuanyou et al., 2025). Furthermore, characteristics like emotional intelligence and mindfulness of one's own career goals and prospects is also recognized as beneficial for doctoral graduates as they navigate their careers following the awarding of their degrees (Hattingh, 2023; Tenschert et al., 2025). Finally, the structure of the careers within which they intend to work can also play a crucial role in determining their success within those positions (Rapuano & Valickas, 2023; Iis et al., 2022).

The influence of supervisors on doctoral graduate careers is recognized by various scholars. For instance, research indicates that many doctoral supervisors do not directly discuss careers with their doctoral students, instead relying upon the experiences of those students in their careers (Green et al., 2023). As such, some doctoral students receive such discussions from their supervisors while others do not. Consequently, some authors have called for changes in the structures of academia to provide better support to doctoral students in these various careers, particularly in relation to incorporating career discussion into the educational experiences of doctoral students themselves (Teperek et al., 2022). Furthermore, technological developments in the world of information and communications technologies (ICT) may be able to provide support in these areas, such as through the use of artificial intelligence (AI) to provide career analytics to doctoral students (Gedrimiene et al., 2024). Yet in most cases, such technologies



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

are underdeveloped and lacking specific considerations regarding doctoral graduates. Thus, many doctoral graduates have to rely upon their own initiative to navigate their careers after receiving their degrees. As with the discussion of the influence of academic supervisors on careers, as noted by McAlpine (2020), some doctoral graduates feel encouraged and empowered by their need to find their own careers while others may feel overwhelmed by such a requirement, especially within today's competitive and complex job market. Thus, understanding the experiences of these doctoral alumni regarding their preparedness for their careers is crucial to understanding where academia can make improvements to doctoral education.

## ***Underlying Theories for the Study***

The typical view of obtaining a doctorate (or PhD) was that after the degree was completed, the doctorate holder would enter academia to complete postdoctoral studies and eventually obtain a tenure track university position. Today, however, it is increasingly difficult for PhD graduates to land such positions in academia. Studies on doctoral education and employability reveal complexities in the education pathways that PhD holders often follow after earning their doctorate (Chen, 2021; McAlpine, 2016; Skakni et al., 2026). With an increasing number of students enrolling in doctoral programs yet limited availability of tenure track university positions, many PhD graduates are exploring careers outside of academia.

This trend is not indicative of a failure of PhD holders to succeed in academia. Instead, it is a response to the changing nature of work and the career options that are available for graduates with PhDs. An increasing number of PhD holders are employed in industries outside of academia (Etmanski, 2020; McAlpine, 2024). Furthermore, PhD holders in STEM and businessrelated fields tend to find employment outside of academia at higher rates than those who earn PhDs in humanities disciplines (Hutt et al., 2024; Zhang et al., 2025).

These PhD holders need to redefine themselves and their careers outside of academia. Career Construction Theory suggests that individuals tend to construct and continually reconstruct the narratives of their careers throughout their lives (Li & Horta, 2024; Galimberti, 2023). Thus, these graduates are actively constructing narratives of themselves that reflect both their capabilities and their career intentions outside of academia.

However, focusing on Career Construction Theory alone will not provide a complete understanding of how PhD graduates actually make their career decisions after receiving their degrees. PhD graduates must also consider the risks and rewards of their career choices. Furthermore, they must consider the availability of such positions outside of academia. Studies have shown that career intentions of PhD graduates can change over time due to various factors, including changes in the availability of academic positions (McAlpine & Emmioğlu, 2015; Amirbayeva & Moqbil, 2025). Factors that may influence these changes in career intention include a graduate's field of study, their desire for career stability, and the demands of their potential new careers outside of academia (Hatt et al., 2024; Zhang et al., 2025).

Social Cognitive Career Theory posits that individuals make their career decisions based on their self-efficacy in the area of careers, their outcome expectations for those careers, and the supports that they experience in pursuing those careers. Thus, individuals with a high level of self-efficacy and outcome expectations for careers outside of academia will make career decisions that move towards such opportunities. In contrast, individuals with limited opportunities for careers outside of academia will make different career decisions from those with high outcome expectations and self-efficacy in the pursuit of such careers (Chen, 2021; McAlpine, 2020).

Beyond the theories of identity construction and cognitive understanding of career choices, PhD graduates also require certain behaviors to navigate their careers outside of academia. In other words, PhD graduates need to know what they will actually do in constructing their careers outside of academia. The study of self-leadership among PhD graduates will help reveal what types of behavioral characteristics and decisions PhD graduates need to make in order to successfully pursue their career goals outside of academia (Chuanyou et al., 2025; Tenschert et al., 2025).



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Furthermore, PhD graduates must have certain psychological resources to overcome the challenges that may arise in their careers outside of academia. Such psychological resources may include, but are not limited to, levels of emotional intelligence and the ability to remain mindful throughout challenging careers (Hattingh, 2023). However, PhD graduates are also influenced by the careers systems and structures within the organizations for which they are applying and seeking employment (Rapuano & Valickas, 2023; Iis et al., 2022).

By integrating these three theories into the investigation of the careers of PhD graduates from a Malaysian Public Research University, this study will be able to provide a clear understanding of the various factors that influence the career decisions of these graduates. Thus, the integrated framework of Career Construction Theory, Social Cognitive Career Theory, and Self-leadership Theory will provide the foundation for investigating the experiences and career choices of these alumni within complex and challenging career environments.

## **PURPOSE OF STUDY**

Building upon the identified gaps in doctoral career transition research, this study aims to systematically examine how doctoral alumni navigate the early post-PhD phase within a Malaysian Public Research University context. The objectives are designed to capture both individual agency and structural influences, while allowing cross-disciplinary comparison across five academic fields. Each research objective is directly aligned with a corresponding research question in ensuring conceptual coherence and methodological clarity. The research objectives for this study are listed as follows:

1. RO1: To explore how doctoral alumni across five disciplines describe their early post-PhD career pathways.
2. RO2: To examine the self-leadership strategies alumni employ in managing career transitions and uncertainty.
3. RO3: To evaluate alumni perceptions of institutional preparation and support during doctoral training.
4. RO4: To analyse how disciplinary context and structural conditions interact with personal agency in shaping career outcomes.
5. RO5: To generate evidence-based recommendations for strengthening doctoral career preparation in Malaysian public research universities.

Subsequently, the research questions are listed as follows:

1. RQ1: How do doctoral alumni from different disciplines describe their career trajectories within the first year after graduation?
2. RQ2: What self-leadership strategies do alumni use to manage uncertainty, goal-setting, and professional identity development?
3. RQ3: How do alumni perceive the adequacy of doctoral training and institutional career support?
4. RQ4: How do disciplinary background, labour market structure, and institutional policies influence career decision-making?
5. RQ5: What institutional improvements do alumni recommend to enhance doctoral career readiness?

### ***Underlying Theories for The Study***

Doctoral education was once widely imagined as a straight road leading into academia, complete the PhD, secure a postdoctoral position, and eventually obtain a tenure-track position. Today, however, that pathway is far less predictable. Research on doctoral education and employability consistently shows that the PhD journey has become increasingly complex and diversified. As doctoral enrolment expands while tenure-track opportunities remain limited (Chen, 2021; McAlpine, 2016; Skakni et al., 2026), many graduates find themselves exploring career directions beyond the traditional academic route.

Rather than representing failure or deviation, this shift reflects broader structural realities. Increasing numbers of



## MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

PhD holders are moving into industry, public policy, consultancy, and interdisciplinary environments (Etmanski, 2020; McAlpine, 2024). These transitions often require more than a simple change of workplace; they involve reinterpreting one's expertise, translating research skills into new contexts, and redefining what it means to be a "doctor." Importantly, disciplinary background shapes these possibilities. Graduates from STEM and business-related fields tend to experience smoother entry into non-academic sectors, while those from humanities disciplines may face narrower opportunity structures (Hutt et al., 2024; Zhang et al., 2025).

These patterns suggest that post-PhD transition is not merely about securing employment but about reconstructing professional identity. Career Construction Theory offers a helpful perspective in this regard, viewing career development as an ongoing narrative process. From this lens, doctoral graduates are not passive recipients of labour market outcomes; they are active agents who interpret, adapt, and craft new professional stories in response to changing contexts (Li & Horta, 2024; Galimberti, 2023). In this sense, the contemporary PhD journey is less a linear ladder and more a dynamic process of meaning-making and identity negotiation.

Focusing only on identity construction does not fully capture how doctoral graduates actually make career decisions. Beyond redefining who they are professionally, graduates must weigh risks, consider possible outcomes, and respond to structural realities in the labour market. Research shows that career intentions are not fixed; they evolve as individuals encounter new information, shifting opportunities, and perceived barriers (Amirbayeva & Moqbil, 2025; McAlpine & Emmioğlu, 2015). Disciplinary employment patterns, institutional hiring practices, and concerns about long-term stability all shape how graduates interpret their options (Hatt et al., 2024; Zhang et al., 2025).

In this regard, Social Cognitive Career Theory offers a useful lens. It explains how self-efficacy beliefs (confidence in one's abilities), outcome expectations (anticipated consequences), and contextual supports or constraints interact to shape career goals and decisions. Graduates who see a strong fit between their skills and market needs tend to articulate clearer and more confident career pathways. In contrast, those who face limited openings or structural constraints often adjust their aspirations, not necessarily because of diminished ability, but in response to environmental conditions (McAlpine, 2020; Chen, 2021).

Career transition, therefore, is not simply a matter of personal identity reconstruction. It is a dynamic process in which individual cognition and external opportunity structures continuously influence one another.

While identity construction helps us understand how doctoral graduates see themselves, it does not fully explain how they actually make career decisions in uncertain environments. Beyond questions of "Who am I as a scholar?" graduates must also ask, "What risks am I willing to take?" "What opportunities are realistically available?", and "How secure is this pathway?" Research on doctoral career transitions shows that intentions often shift over time as individuals encounter changing labour markets, institutional expectations, and personal circumstances. Career decisions are therefore shaped not only by aspirations, but also by perceived barriers, disciplinary job prospects, and judgments about stability and growth.

In this regard, Social Cognitive Career Theory offers a useful lens. It highlights how self-efficacy (belief in one's ability), outcome expectations (belief about likely results), and contextual supports or constraints work together to influence career goals. Graduates who feel confident in their competencies and see a clear match between their skills and market demands tend to move forward with greater clarity and purpose. In contrast, those who face limited opportunities or structural barriers may adjust, delay, or redirect their aspirations. Career transition, therefore, is not a simple shift from one role to another, but a dynamic negotiation between personal beliefs and the realities of the environment.

Beyond identity and cognitive reflection, navigating post-PhD uncertainty also requires strong behavioural self-regulation. Transitioning from doctoral study into the workforce is not only about how graduates see themselves,



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

but also about what they actively do. Research on self-leadership shows that graduates who set clear goals, monitor their own progress, and remain resilient in the face of setbacks are better able to adapt to changing career landscapes (Chuanyou et al., 2025; Tenschert et al., 2025). In uncertain environments, these proactive behaviours become critical survival tools rather than optional strengths.

At the same time, psychological resources are crucial. Emotional intelligence and mindfulness help graduates manage stress, regulate emotions, and cope with ambiguity during career transitions (Hattingh, 2023). However, individual effort alone is not sufficient. Organizational career systems and institutional support structures shape the opportunities available and influence how effectively graduates can translate their initiative into professional outcomes (Iis et al., 2022; Rapuano & Valickas, 2023).

By integrating Career Construction Theory, Social Cognitive Career Theory, and Self-Leadership Theory, this study frames post-PhD transition as a dynamic interaction between personal agency and structural conditions. Career development is therefore understood not as a purely individual journey, but as a negotiated process shaped by disciplinary contexts, institutional preparation, and broader labour market realities. This integrated perspective provides a clear and coherent foundation for examining how doctoral alumni in a Malaysian Public Research University navigate their early career paths within complex and evolving environments.

## METHODOLOGY

This study adopted a qualitative interpretive research design to gain a deeper understanding of how doctoral alumni experience and navigate their post-PhD career transitions. The decision to use an interpretive approach was intentional and aligned with the core purpose of the research, to explore how individuals make sense of their career journeys after completing their doctorate.

Career transition is not merely a change in employment status; it involves shifts in identity, aspirations, expectations, and professional positioning. For many doctoral graduates, the transition period includes uncertainty, negotiation of self-concept, and strategic adaptation to evolving opportunities. An interpretive design was therefore appropriate because it allowed the study to move beyond surface-level outcomes and instead focus on participants' lived experiences within their specific institutional, cultural, and professional contexts.

Rather than relying on predefined variables or standardized measurements, this research prioritised participants' narratives, reflections, and interpretations of their own journeys. The emphasis was on understanding how meaning is constructed, how alumni interpret their doctoral training, how they perceive institutional support, and how they strategically respond to opportunities and constraints in the labour market. Such meaning-making processes are central to understanding career transitions, particularly at the doctoral level, where identity and expertise are deeply intertwined.

By situating participants' experiences within their real-world contexts, the study was able to capture the complexity, nuance, and individuality of their career pathways. Table 2 presents an overview of the methodological design, outlining the key components that guided the research process.

**Table 2**  
*Overview of Methodological Design*

Component	Description
Participants	15 doctoral alumni from a Malaysian Public Research University
Disciplinary Distribution	Education (3), Science (3), Engineering (3), Business and Accountancy (3), Languages and Linguistics (3)



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

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Sampling Strategy	Purposive sampling
Data Collection Method	Semi-structured in-depth interviews
Data Analysis Approach	Thematic analysis using theory-informed coding
Comparative Strategy	Cross-case comparison across disciplines
Ethical Considerations	Confidentiality assured, voluntary participation, institutional ethics approval obtained

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This study was carried out with 15 doctoral alumni from a Malaysian Public Research University, each of whom had recently completed the demanding journey of a PhD. Rather than treating them simply as data sources, the study approached them as individuals navigating a significant life and career transition.

To ensure that the findings reflected a range of academic cultures and career pathways, participants were drawn evenly from five disciplines: Education, Science, Engineering, Business and Accountancy, and Languages and Linguistics. Three alumni represented each field. This balanced structure made it possible to compare how transition experiences unfolded across disciplines, while still preserving the depth and nuance within each academic context.

All participants had graduated within the past one to three years. This timeframe was intentionally chosen so that their reflections would remain fresh, emotionally resonant, and closely connected to the realities of early career adjustment. Their experiences captured the uncertainty, decision-making, and identity negotiation that often characterize the immediate post-PhD period.

Purposive sampling guided participant selection. Alumni were invited not only because of their disciplinary background, but also because they were willing to engage thoughtfully and critically with their own transition journeys. The focus of the study was not statistical generalization, but a rich, contextualised understanding. Recruitment continued until thematic sufficiency was reached, when additional interviews no longer introduced substantially new insights, but instead reinforced emerging patterns.

Data for this study were gathered through semi-structured, in-depth interviews. This approach provided a balance between consistency across participants and the flexibility to explore each person's unique experiences. Conversations focused on participants' career paths, self-leadership practices, perceptions of institutional support, and the broader structural factors influencing their transitions. With participants' consent, interviews were recorded and transcribed word-for-word.

The data were analysed using thematic analysis, starting with coding informed by existing career development and self-leadership theories, then refined inductively to capture new insights that emerged from the interviews. Comparisons across different disciplines helped identify common patterns as well as unique variations in career transitions. Ethical approval was secured from the university's review board, participation was entirely voluntary, and all participants provided informed consent. To protect confidentiality, pseudonyms were used and identifying information was removed, with data stored securely and accessible only to the research team.

## FINDINGS

### *Summary Description of Participants*

Table 1 shows that the 15 participants ranged in age from 31 to 38 years old, reflecting early-career professionals who are within the first stage of postdoctoral transition. This age range is consistent with typical doctoral completion timelines in Malaysian public research universities, placing the participants within a critical career



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

consolidation period.

**Table 1**

*Demographic Profile of Participants (N = 15)*

Participant ID	Age	Gender	Field of Study	Current Occupation
P1	33	Female	Education	Senior Lecturer, Private University
P2	35	Male	Education	Curriculum Consultant, Education Consultancy Firm
P3	32	Female	Education	Research Officer, Educational NGO
P4	34	Male	Science	Postdoctoral Research Fellow, Public University
P5	36	Female	Science	R&D Scientist, Biotechnology Company
P6	31	Male	Science	Data Analyst, Environmental Research Agency
P7	37	Male	Engineering	Senior Engineer, Multinational Corporation
P8	33	Female	Engineering	Assistant Professor, Technical University
P9	35	Male	Engineering	Project Manager, Engineering Consultancy Firm
P10	34	Female	Business and Accountancy	Financial Analyst, Investment Firm
P11	38	Male	Business and Accountancy	Senior Lecturer, Public University
P12	32	Female	Business and Accountancy	Strategy Manager, Corporate Sector
P13	36	Female	Languages and Linguistics	Lecturer, Public University
P14	33	Male	Languages and Linguistics	Language Policy Officer, Government Agency
P15	35	Female	Languages and Linguistics	Academic Editor, International Publishing Firm

In terms of gender distribution, the sample includes eight female and seven male alumni, indicating a relatively balanced representation. This distribution allows the study to capture diverse perspectives while avoiding gender dominance within the dataset. The participants represent five major disciplinary clusters. Education, Languages, and Linguistics alumni are primarily positioned within academic and policy-related roles, reflecting traditional career pathways in these fields. Science and Engineering alumni demonstrate a stronger presence in industry, research and development, and technical consultancy, although academic positions are also represented. Business and Accountancy alumni exhibit the most diversified pathways, including academia, corporate management, and financial analysis roles. This disciplinary spread provides insight into how structural opportunity patterns differ across fields.

Regarding current occupations, participants are employed across multiple sectors, including public universities, private universities, multinational corporations, research institutes, government agencies, non-governmental organisations, and corporate firms. This diversity highlights that doctoral graduates do not follow a single linear academic pathway but instead pursue varied professional trajectories shaped by disciplinary context, personal agency, and market conditions.

Overall, the participant profile demonstrates balanced disciplinary representation, gender diversity, and sectoral variation. This diversity enhances the credibility of the study by ensuring that the findings reflect a broad range of post-PhD transition experiences, rather than being confined to a single professional pathway.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## ***Findings for RQ1***

RQ1: How do doctoral alumni from different disciplines describe their early post-PhD career trajectories?

Analysis of the interview data revealed three major themes that describe early post-PhD career pathways: (1) Planned Academic Continuity, (2) Strategic Industry Transition, and (3) Adaptive Career Redirection. These themes reflect variation across disciplines while highlighting the role of opportunity structures and personal decision-making.

### **Theme 1: Planned Academic Continuity**

**Codes: Academic Aspiration, Postdoctoral Positioning, Research Identity Stability**

Several participants described a relatively linear transition into academia. These alumni, primarily from Education, Science, and Languages and Linguistics, reported that their doctoral training aligned closely with their intended academic careers. They viewed their PhD as preparation for teaching, publishing, and securing postdoctoral or lecturer roles.

One participant from Education (P1) explained:

From the beginning of my final year, my plan was very clear. I wanted to stay in academia. I applied for lecturer positions even before submitting my thesis because I saw myself as a researcher and educator long-term.

Similarly, a Science graduate (P4) described the transition as structured and goal-driven:

I knew that postdoctoral experience was necessary to strengthen my publication record. So, I treated my final year like preparation for the next research phase, not the end.

A Languages and Linguistics alumnus (P13) reflected:

Teaching and research felt like a natural continuation of my doctoral identity. I did not seriously consider industry because my professional identity was already academic.

These narratives illustrate identity continuity, where doctoral training reinforced rather than disrupted academic career aspirations.

### **Theme 2: Strategic Industry Transition**

**Codes: Market Awareness, Skill Repositioning, Career Pragmatism**

Participants from Engineering, Science, and Business and Accountancy were more likely to describe a deliberate shift toward industry. Rather than perceiving industry entry as a compromise, these alumni framed it as strategic career optimization.

An Engineering graduate (P7) shared:

During my final year, I realised that academic positions were limited. I began networking with industry contacts and positioning my research skills as applied problem-solving experience.

A Business and Accountancy alumnus (P10) noted:

The corporate sector offered faster career progression. I evaluated my options based on stability, income, and



growth potential, not just academic interest.

A Science participant (P6) explained:

Data analytics was a skill I developed during my PhD. I saw that industry demand was high, so I adjusted my direction accordingly.

These accounts demonstrate calculated decision-making influenced by labour market realities and transferable skill awareness.

### **Theme 3: Adaptive Career Redirection**

**Codes: Expectation-Reality Gap, Transitional Uncertainty, Identity Reconstruction**

A third group of participants described career pathways that diverged from their original intentions. These alumni experienced uncertainty and recalibrated their goals during or after graduation.

An Education alumnus (P2) reflected:

I initially planned to become a lecturer, but after several unsuccessful applications, I started exploring consultancy work. It was not my first plan, but it became a meaningful alternative.

A Languages and Linguistics graduate (P14) described:

I thought I would remain in academia, but policy-related roles opened up unexpectedly. It required me to rethink how my expertise could be applied.

An Engineering alumnus (P9) stated:

The transition period was stressful. I had to rethink my professional identity because the opportunities I expected did not materialise immediately.

These quotations highlight identity flexibility and adaptive reconstruction when facing structural constraints or unmet expectations.

**Cross-Disciplinary Observations.** The findings suggest that disciplinary structure shapes early career trajectories significantly. STEM and Business alumni demonstrated stronger industry integration, while Education and Languages showed greater academic continuity. However, across all disciplines, participants emphasised strategic evaluation and adaptation rather than passive transition. Overall, early post-PhD career pathways were not uniform or predetermined. The interaction between professional identity, labour market conditions, and personal agency has shaped them.

### **Findings for RQ2**

RQ2: What self-leadership strategies do alumni use to manage uncertainty, goal-setting, and professional identity development during the post-PhD transition?

Analysis of the interviews revealed three major themes related to self-leadership: (1) Proactive Goal Structuring, (2) Strategic Skill Repositioning, and (3) Psychological Self-Regulation and Resilience. Across disciplines, alumni demonstrated active agency in navigating uncertainty rather than relying solely on institutional guidance.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## **Theme 1: Proactive Goal Structuring**

**Codes: Structured Planning, Milestone Tracking, Career Mapping**

Participants described setting clear short-term and long-term goals during their final doctoral year. Rather than waiting for opportunities, they created structured transition plans.

A Business and Accountancy alumnus (P12) explained:

I broke my transition into phases. First, I updated my CV and LinkedIn. Then I targeted five companies every week. Having clear milestones reduced my anxiety.

An Engineering participant (P8) shared:

I created a personal timeline six months before graduation. I listed publication targets, job applications, and networking events. It gave me direction.

An Education graduate (P3) reflected:

I maintained a simple personal development document. Every month, I reviewed my progress and adjusted my goals.

These narratives illustrate planning and forward-thinking behaviour, reflecting strong internal self-direction.

## **Theme 2: Strategic Skill Repositioning**

**Codes: Transferable Skills Awareness, Professional Branding, Market Alignment**

Many alumni emphasised reframing their doctoral competencies to align with external demands. This was especially evident among those entering the industry.

A Science alumnus (P6) stated:

Instead of saying I did research on environmental modelling, I presented myself as someone skilled in predictive analytics and data interpretation.

An Engineering graduate (P7) noted:

I realised companies don't care about your thesis title. They care about solutions. So, I translated my research into practical outcomes.

A Languages and Linguistics participant (P15) explained:

I reframed my academic editing experience as project management and quality assurance skills.

These accounts show conscious identity repositioning and skill translation, indicating adaptive self-leadership.

## **Theme 3: Psychological Self-Regulation and Resilience**

**Codes: Emotional Regulation, Coping with Rejection, Cognitive Reframing**

Participants described managing emotional stress during the job search and uncertainty. Rejection and delay were common experiences.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

A Languages and Linguistics alumnus (P14) shared:

After two rejected applications, I felt discouraged. But I reminded myself that rejection is normal. I treated it as feedback, not failure.

An Education graduate (P2) reflected:

There were moments I doubted my competence. I had to consciously manage negative thoughts and focus on what I could control.

A Science participant (P5) stated:

Waiting for job responses was stressful. I kept myself productive by improving my technical certifications instead of overthinking.

These responses reveal cognitive reframing, emotional self-control, and constructive coping strategies that sustained motivation throughout uncertainty.

***Cross-Disciplinary Insights.*** While goal structuring was common across all fields, skill repositioning was more prominent among STEM and Business alumni transitioning into industry roles. Psychological resilience appeared universal, suggesting that emotional regulation is a central feature of post-PhD transition regardless of discipline. Overall, alumni did not describe their transition as passive or institution-driven. Instead, they demonstrated self-directed planning, adaptive learning, and reflective adjustment, indicating that self-leadership played a critical role in career navigation.

### ***Findings for RQ3***

RQ3: How do alumni perceive the adequacy of doctoral training and institutional career support during their transition?

Analysis revealed three major themes:

1. Research-Centric Preparation with Limited Career Orientation
2. Supervisor-Dependent Support Structures
3. Institutional Gaps in Structured Career Services.

While participants acknowledged strong research training, many perceived institutional career preparations as uneven and informal.

### **Theme 1: Research-Centric Preparation with Limited Career Orientation**

**Codes: Research Competence, Academic Focus, Industry Unpreparedness**

Most alumni described their doctoral training as rigorous in research methodology, publication skills, and critical thinking. However, they noted limited structured preparation for broader career pathways.

A Science alumnus (P4) reflected:

Academically, I was well prepared. I could publish, design studies, and supervise projects. But when it came to preparing for non-academic careers, there was no formal guidance.



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

A Business and Accountancy participant (P10) stated:

The program trained us to become researchers, not necessarily professionals outside academia. I had to figure out corporate expectations on my own.

An Engineering graduate (P9) explained:

Technical depth was strong, but industry exposure was minimal. I had to learn how to translate my expertise for employers.

These responses suggest that doctoral training emphasised academic productivity but did not systematically integrate career diversification support.

## **Theme 2: Supervisor-Dependent Support Structures**

**Codes: Informal Mentoring, Unequal Access, Individual Variation**

Participants reported that career preparation often depended on the individual supervisor rather than institutional systems. Alumni with proactive supervisors experienced stronger career guidance.

An Education participant (P1) noted:

My supervisor encouraged me to apply for conferences and introduced me to colleagues. That networking support made a difference.

A Languages and Linguistics alumnus (P13) shared:

Career advice depended entirely on the supervisor. Some of my peers received more strategic mentoring than others.

A Science graduate (P5) stated:

There was no structured career briefing. If your supervisor was supportive, you benefited. If not, you were on your own.

This theme highlights structural inconsistency and reliance on informal mentoring rather than institutionalized career systems.

## **Theme 3: Institutional Gaps in Structured Career Services**

**Codes: Limited Workshops, Lack of Transition Programs, Absence of PDP Framework**

Participants consistently reported limited structured career services specifically targeted at doctoral students. While general career centres existed, they were perceived as undergraduate-focused.

An Engineering participant (P7) commented:

The university had career fairs, but they were more suitable for bachelor students. Doctoral-level guidance was missing.

A Business alumnus (P12) explained:



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

There was no structured personal development planning. If we had systematic career mapping sessions in the final year, it would have reduced uncertainty.

A Languages and Linguistics graduate (P14) reflected:

I felt the transition after graduation was abrupt. Once you submitted your thesis, institutional support almost disappeared.

These accounts indicate a perceived gap between doctoral completion processes and post-graduation career integration mechanisms.

**Cross-Disciplinary Observations.** STEM participants expressed stronger concerns about industry linkage gaps, while Education and Languages alumni emphasised the need for academic career mentoring pathways. Across all disciplines, alumni highlighted the absence of a structured doctoral-level career framework. Despite these gaps, participants did not entirely attribute transition challenges to the institution. Instead, they described institutional preparation as academically strong but strategically incomplete. Overall, the findings suggest that Malaysian public research universities provide solid research training but lack integrated, discipline-sensitive, and structured doctoral career transition systems.

### **Findings for RQ4**

RQ4: How do disciplinary background, labour market structure, and institutional policies influence career decision-making?

Analysis revealed three interconnected themes:

1. Disciplinary Opportunity Structures
2. Labour Market Realities and Economic Considerations
3. Institutional and Policy Constraints.

These themes demonstrate that career decisions were not purely personal choices but were shaped by structural environments interacting with individual agency.

### **Theme 1: Disciplinary Opportunity Structures**

**Codes: Field-Specific Pathways, Academic Saturation, Industry Absorption Capacity**

Participants consistently indicated that their academic discipline strongly shaped the range of available career options.

An Engineering alumnus (P7) stated:

Engineering graduates are absorbed quickly by industry. Companies value technical expertise. That influenced my decision to move into the corporate sector.

A Science participant (P5) reflected:

Postdoctoral positions are competitive but available in research-heavy fields. However, long-term academic security remains uncertain.

In contrast, an Education graduate (P2) explained:



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

In Education, academic roles are the most visible pathway. Industry options are less structured compared to Engineering or Business.

Similarly, a Languages and Linguistics alumnus (P14) noted:

Our discipline is narrower. Opportunities exist, but they are fewer and often linked to academia or policy institutions.

These findings suggest that disciplinary structure determines perceived opportunity breadth and shapes risk tolerance in career decisions.

## **Theme 2: Labour Market Realities and Economic Considerations**

**Codes: Salary Differentials, Employment Stability, Market Demand**

Participants described evaluating career pathways based on economic and market conditions rather than purely academic preference.

A Business and Accountancy graduate (P10) stated:

The salary gap between academia and corporate roles was significant. Financial stability became a practical consideration.

An Engineering alumnus (P9) explained:

Industry offered faster career progression and clearer performance metrics compared to waiting for academic openings.

A Science participant (P6) shared:

The job market influenced my direction. Data-related roles were in high demand, so I aligned my skills accordingly.

These responses illustrate rational career decision-making shaped by economic incentives and employment security concerns.

## **Theme 3: Institutional and Policy Constraints**

**Codes: Recruitment limitations, Contract-based roles, Bureaucratic barriers**

Participants highlighted structural limitations within public universities and national employment systems.

An Education alumnus (P1) remarked:

Public university recruitment cycles are slow and limited. Even qualified candidates may wait long periods.

A Languages and Linguistics graduate (P13) noted:

Contract-based positions are common. Permanent appointments are increasingly difficult to secure.

A Business alumnus (P11) stated:



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Institutional hiring policies are highly competitive and sometimes unpredictable. That influenced my decision to diversify my options.

Participants described these constraints as shaping their level of risk tolerance and prompting career diversification strategies.

**Interaction Between Agency and Structure.** Across disciplines, participants demonstrated active decision-making within structural limits. While labour markets and institutional policies shaped opportunity boundaries, alumni did not describe themselves as powerless. Instead, they strategically adapted their choices to contextual realities.

For example, an Engineering graduate (P8) explained:

I assessed the academic market carefully. When I realised positions were limited, I strengthened my industry portfolio instead of waiting passively.

This reflects adaptive agency operating within structural constraints.

**Cross-Disciplinary Patterns.** STEM and Business alumni reported broader industry pathways supported by strong market demand, while Education and Languages graduates faced narrower, more academic-centred options. Across all disciplines, economic stability and institutional hiring constraints influenced risk assessment and career choices. Overall, career decisions reflected the interaction between disciplinary opportunity structures, labour market demand, and institutional limitations rather than personal preference alone.

## **Findings for RQ5**

RQ5: What institutional improvements do alumni recommend to enhance doctoral career readiness in Malaysian public research universities?

Analysis of the interviews revealed three major themes:

1. Structured and Early Career Planning Integration
2. Industry and Cross-Sector Exposure
3. Alumni-Based Mentoring and Transition Support Systems

Participants consistently emphasized that career preparation should not begin at the point of thesis submission but should be embedded throughout doctoral training.

### **Theme 1: Structured and Early Career Planning Integration**

**Codes: Formal PDP framework, Early intervention, Career mapping workshops**

Many alumni recommended integrating structured career planning into doctoral programs from the early stages rather than limiting preparation to informal advice.

A Business and Accountancy alumnus (P12) stated:

Career discussions should start in the first year, not in the final semester. If we had structured career mapping earlier, decisions would have been more strategic.

An Education graduate (P3) explained:



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

A formal personal development plan reviewed annually would have helped clarify goals and reduce last-minute uncertainty.

An Engineering participant (P8) reflected:

Doctoral training should include mandatory career planning sessions, not optional workshops that few attend.

These responses indicate strong support for institutionalized and monitored career development frameworks rather than voluntary or ad hoc initiatives.

## **Theme 2: Industry and Cross-Sector Exposure**

**Codes: Internship Opportunities, Applied Collaboration, Employer Engagement**

Participants across STEM and non-STEM disciplines highlighted the need for stronger industry linkage and practical exposure.

A Science alumnus (P6) noted:

Short industry attachments during the PhD would have made the transition smoother. We had strong theory training but limited exposure to real industry expectations.

An Engineering graduate (P7) shared:

Collaboration projects with companies should be encouraged. It builds networks before graduation.

A Languages and Linguistics participant (P15) commented:

Even in non-technical fields, exposure to policy agencies or publishing sectors would expand our professional awareness.

These findings suggest that cross-sector engagement enhances employability confidence and reduces the gap between academic preparation and professional demand.

## **Theme 3: Alumni-Based Mentoring and Transition Support Systems**

**Codes: Alumni Mentoring Network, Transition Workshops, Post-Graduation Support**

Participants recommended leveraging alumni networks to guide current doctoral students through realistic transition experiences.

An Education alumnus (P1) explained:

Hearing from alumni who recently transitioned would make career planning more realistic and less abstract.

A Business participant (P11) stated:

Universities should maintain structured alumni mentoring platforms, not just informal networking events.

A Science graduate (P4) reflected:



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Support should continue after graduation for at least six months. The immediate post-PhD period is the most critical.

These responses highlight the need for sustained transitional support beyond thesis completion.

**Cross-Disciplinary Observations.** Although STEM participants emphasized industry linkage more strongly, all disciplines supported structured career planning and mentoring mechanisms. Participants did not dismiss the value of academic preparation but argued for broader career readiness integration. Across all five disciplines, alumni consistently framed career preparation as a shared institutional responsibility rather than an individual burden alone.

## DISCUSSION

### ***Discussion of RQ1: Early Post-PhD Career Trajectories***

The findings regarding the trajectories of Malaysian doctoral alumni's careers in the early years after receiving their PhDs are varied yet revealing. Three main career trajectories are represented within the alumni group: those who chose to remain within the academic world, those who moved into non-academic industry roles, and those whose careers evolved differently from the trajectories they had initially planned for after receiving their PhDs. In each case, the trajectory that an alumnus took mirrors findings from the existing literature regarding the types of careers that PhD holders tend to pursue after earning their degrees (Chen, 2021; Skakni et al., 2026).

For those who remained within academia, their reasons for remaining within the academic world often included influences of their doctoral period (Galimberti, 2023). Many felt a strong influence from the academic habitus that they developed throughout their doctoral studies contributed to their decisions to remain within academia. However, for many others, their careers began to shift into non-academic roles either as a strategic decision to enter the workforce or as adaptations to their careers in response to various external factors that emerged after receiving their PhD.

The findings regarding the trajectories of alumni careers reflect both Career Construction Theory as well as the notion that alumni made deliberate and conscious decisions regarding their careers early in their lives after receiving their degrees (Li & Horta, 2024). Each alumnus had constructed their careers in accordance with both their life experiences prior to obtaining their PhDs and the knowledge that they had gained during their doctoral studies. These findings show that alumni began to build their stories after receiving their PhDs and to adapt their stories according to their experiences.

Furthermore, findings also suggest that the disciplines from which the alumni emerged had some influence upon the types of careers that they began to pursue. Those with STEM and business backgrounds appear to have moved more smoothly into non-academic jobs than those from education and language disciplines (Hatt et al., 2024; Zhang et al., 2025). One interpretation of these findings is that the disciplines from which the alumni emerged had different opportunities to develop careers outside of academia, leading to adaptations in the types of decisions that the alumni from those disciplines made about their careers early in their lives after receiving their PhDs. Thus, each alumnus's academic and professional identities appear to have emerged from both their individual dispositions regarding their careers as well as the structure and requirements of the disciplines from which they emerged.

### ***Discussion of RQ2: Self-Leadership and Transition Management***

The findings regarding self-leadership amongst alumni indicate that the alumni tended to take an active role within their careers after receiving their PhDs. The alumni were not waiting for developments in their careers; instead, they often initiated steps to upgrade their careers and to work towards achieving their goals within the career that they had chosen for themselves. Furthermore, many of the alumni also exhibited signs of psychological resilience



## MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

within their careers in the early years after receiving their PhDs. Alumni had to contend with rejection from various positions and career changes. However, they persisted in their pursuit of their careers and goals. Such findings reflect the findings of Self-Leadership Theory (Bandura, 2016; Lopez et al., 2023).

Some of the findings also reflect Social Cognitive Career Theory. For instance, alumni considered the demands of the labor market and the possible outcomes of their careers early in their lives after receiving their PhDs. They adapted their self-leadership strategies and career goals according to the outcomes that they perceived as possible within their careers. These findings are similar to those by McAlpine and Emmioğlu (2015), who found that many doctoral candidates modify their career intentions throughout their PhD programs to adapt to the possibilities of their careers. Furthermore, alumni also adapted their careers according to strategies for developing psychological resilience within their careers after receiving their PhDs. These findings support the notion of the importance of psychological regulation in the doctoral student's careers as described by other researchers in the field (Chen et al., 2023; Rapuano & Valickas, 2023). Thus, alumni employed self-leadership strategies early in their lives after receiving their PhDs to adapt their careers to the requirements of the labor market and their individual dispositions towards their careers.

### ***Discussion of RQ3: Institutional Preparation and Career Support***

One of the findings regarding career support from the institutions from which the alumni emerged is that the career preparation was lacking. While these institutions place great effort into training doctoral candidates to become excellent researchers, they do not provide similar support in preparing PhD holders for the various careers that may await them after earning their degrees. This finding echoes findings from other research studies on the careers of PhD holders, where the preparation for careers other than academia is considered lacking by many institutions (McAlpine, 2020).

For the majority of alumni, the support that they received from their supervisors whilst earning their PhDs had a major influence upon their careers. However, the extent to which they received such support varied from alumnus to alumnus. For some, their supervisors had a major influence upon their careers, while other supervisors provided little support to their careers. Such findings echo findings from Green et al. (2023), who determined that the support that doctoral students receive from their supervisors has a major and influential effect upon their careers. Furthermore, there were findings of a lack of support for personal development within the institutions from which the alumni emerged. Thus, many alumni felt that they had to search for jobs within the labor market and to adapt their careers to the requirements of those jobs. Such findings echo findings by Amirbayeva and Moqbil (2025), who reported that many PhD holders feel that their careers could have been better prepared for by their institutions prior to entering the labor market following the awarding of their degrees.

While alumni were highly satisfied with the preparation of their careers within the institutions from which they earned their PhDs, their dissatisfaction emerged regarding the lack of preparation of their careers for the job market. For instance, while they were well-aware of their research and analytical skills, they felt that their careers were not prepared for the job market in which they would emerge following earning their PhDs. Thus, alumni felt that their careers were prepared for academia but not for the job market.

### ***Discussion of RQ4: Disciplinary and Structural Influences on Decision-Making***

Finally, alumni's careers emerged from both their own decisions but also from the structure of their disciplines. The decisions from which alumni made for their careers emerged from a balancing act between the desires of the individual and the structure of their disciplines' job markets. For instance, those within STEM and business disciplines had more opportunities for employment outside of academia than those from education and language disciplines. Thus, they made different career decisions than their peers from other disciplines. Such findings echo findings from other studies on career decisions from alumni of different disciplines (Hatt et al., 2024; Zhang et al., 2025).



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

## ***Discussion of RQ5: Institutional Reform and Career Readiness Integration***

Furthermore, alumni's careers emerged not just from structure but also from their abilities to take advantage of opportunities. While many alumni were aware of the structure of their careers from their disciplines, they made individual decisions that adapted their careers to the opportunities that emerged from those structures. For instance, when there were few academic jobs available to those with PhDs in Malaysia, many alumni reevaluated their careers and made decisions to follow other careers. Such findings reflect Social Cognitive Career Theory, as these alumni recognized both opportunities and barriers to their careers and adapted their careers according to those findings (Bandura, 2016; Lopez et al., 2023).

More specifically, the findings from RQ5 indicate a call for institutional changes within the PhD programs from which alumni emerged. Most alumni believe that career development should be an essential part of the PhD program from start to finish. Thus, suggestions for institutional changes included the implementation of formal personal development planning within the PhD programs, increasing the exposure to industry careers for PhD candidates, and establishing alumni mentoring networks to assist current PhD candidates in developing their careers within academia and outside of academia. Such suggestions echo recommendations from other studies on career development within PhD programs, wherein most recommend the implementation of career development frameworks within those programs to prepare their PhD candidates for both academic and non-academic careers (Rapuano & Valickas, 2023; McAlpine, 2020). Furthermore, other suggestions for institutional changes reflect awareness from alumni of the changing nature of PhD candidates' careers, as they recognize that careers in academia are not the only careers in which PhD candidates should focus their efforts (Zhang et al., 2025; Teperek et al., 2022).

Furthermore, one of the suggestions for institutional changes is an indication of the recognition from alumni of the role of institutions in the careers of PhD candidates. While the careers of PhD candidates are often thought to be the responsibility of the candidates themselves, the alumni suggest that institutions should also take responsibility in the development of the careers of their PhD candidates. Thus, careers should be a joint responsibility of both institutions and PhD candidates.

## ***Integrated Theoretical Implications***

The findings from RQ1 to RQ5 as a whole indicate that the careers of the alumni were not predetermined but instead developed over time in response to various influences. In some cases, they adapted their careers in response to opportunities within their disciplines. Other times, they adapted their careers according to theoretical principles, such as those from Career Construction Theory, Social Cognitive Career Theory, and Self-Leadership Theory. Thus, their careers both reflected and developed according to theoretical principles, but within the context of their public research universities in Malaysia.

Rather than simply following a pre-existing academic career for their PhD degrees, alumni of these public research universities shaped their own careers according to their knowledge, skills, and abilities as developed throughout earning their degrees, their knowledge of their disciplines' opportunities for employment, and various other influences. Thus, these alumni added insight to the discussion of the theories of career development, positioning them within the context of Malaysia and its public research universities.

## **IMPLICATIONS**

In the institutional level, the findings of this research study indicate the need for public research universities in Malaysia to adopt a doctoral education model that goes beyond solely focusing on conducting research. Rather, these doctoral programs should adopt a model that includes the integration of career development modules for doctoral candidates within their PhD programs. As discussed by McAlpine (2020) and Skakni et al. (2026), many PhD graduates feel underprepared for careers outside of academia. Thus, as suggested by Amirbayeva and Moqbil



## MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

(2025), the introduction of personal development plans for doctoral candidates will allow them to begin to think about their careers prior to the completion of their PhD degrees. Furthermore, it is also important for these programs to offer career development workshops specific to the various fields of study that have different opportunities for employment upon completion of a PhD. As noted by Hatt et al. (2024) and Zhang et al. (2025), the number of employment opportunities for PhD graduates varies depending upon the field of study for the PhD degree. Additionally, establishing alumni mentoring programs will allow for doctoral candidates to receive guidance from individuals who have already completed their PhD degrees and successfully entered the workforce. Currently, guidance for these candidates is often limited to that of their supervisors alone (Green et al., 2023). By instituting these changes at the universities, doctoral candidates will feel more prepared and confident in their careers after the completion of their PhD degrees.

At the policy level, it is clear from the findings of this study that the PhD graduates of public research universities in Malaysia need more direction in their careers after completing their PhD degrees. The lack of direction regarding their careers after the completion of their PhD degrees creates uncertainty in these graduates regarding their careers. Furthermore, the limited availability of tenure-track positions in universities creates additional uncertainties in the graduate's decision to pursue careers within the academic sector alone. Instead, the government and the higher education authorities can encourage the universities to develop partnerships with industries to allow for the PhD graduates to become exposed to careers outside of academia. This would enable these graduates to have a better understanding of the different careers that are available to them after the completion of their PhD degrees. By making changes to the policies of the higher education authorities to encourage the creation of these partnerships, the PhD graduates would become more employable and able to transition into their careers of choice.

Within the doctoral program level, the findings of this research study indicate the need to focus on incorporating modules into the PhD programs that focus on the development of the skills that can be used beyond academia. Despite the vast amount of knowledge and research skills that are developed within the requirements of a PhD candidate, many graduate with a lack of knowledge of how to utilize those skills outside of academia (Etmanski, 2020; McAlpine, 2024). Such programs can include workshops on communication skills, leadership skills, project management skills, and career planning skills (Chuanyou et al., 2025; Tenschert et al., 2025). Additionally, it is crucial for these programs to include components regarding the development of careers within the PhD programs. Many PhD candidates struggle with the need and ability to plan their careers within their programs. Thus, encouraging the development of programs that allow for the candidates to reflect upon their careers within their programs will allow for the reduction of any uncertainty regarding these careers of the graduates post-PhD degree (McAlpine & Emmioğlu, 2015).

### ***Limitations of the Study***

The limitations of the study are in the fact that the research is based upon the experiences of the PhD graduates from a Malaysian public research university. Thus, the findings of the study can only be applied to the same type of universities, and cannot be generally applied to other universities abroad or at home. The various systems for PhD degrees are vastly different from university to university across the country. Furthermore, international PhD graduates may experience additional challenges than those from within the country (Adhikari & Bastola).

Another limitation to this study is that the research is based upon qualitative methods. Methods based upon qualitative research aim to understand the experiences of the participants rather than testing for specific outcomes or examining specific portions of the population (John W. Creswell & Cheryl N. Poth). Thus, qualitative research can provide insight into the experiences of the individuals that participated in this study, however it does not attempt to make generalisations about all PhD graduates from these public research universities within Malaysia.

Thirdly, the focus groups were based upon self-reported experiences and opinions of the individuals who graduated from these PhD programs. Thus, the findings are based upon the interpretations of the graduates regarding their



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

own PhD experiences and careers.

Fourthly, while the fields that represented the participants within the focus groups were balanced, there were only three individuals from each field within the universities. Thus, conclusions regarding specific fields based upon these interviews would lack the statistical significance to make generalisations regarding those specific fields of study within the universities.

Fifthly, the individuals that participated in this study were exclusively alumni of the university, which limits the scope of this study to the alumni of this university and their experiences. Yet, the inclusion of these individuals would allow for a more complete understanding of the careers of these graduates.

### ***Suggestions for Future Research***

In the future, it would be of interest to investigate the careers of PhD graduates from different public universities in Malaysia. By observing the career outcomes of individuals from different universities and comparing those outcomes to one another, the higher education authorities can determine which universities are successfully providing their graduates with careers after the completion of their degrees, and which may require change to their doctoral programs to improve the outcomes of their graduates.

Furthermore, it would also be of interest to investigate the careers of PhD graduates over longer periods of time. While many PhD graduates enter the workforce after the completion of their degrees, their careers evolve over time. Understanding the changes in their careers over time will provide insight into the outcomes of their PhD degrees after their careers have developed in various ways.

Furthermore, it will also be of interest to perform international research into the career outcomes of PhD graduates. As discussed by Skakni et al. (2026), the PhD graduates of different countries experience different challenges within their own countries due to the different policies regarding higher education and employment of these graduates. Observing the international outcomes of these graduates will allow for the research to provide recommendations to the universities of different countries regarding the changes that may be needed in their doctoral programs.

Furthermore, future research could focus upon the challenges of PhD graduates in utilizing skills acquired in their PhD degrees for employment. Tools such as AI can analyze the skills that graduates have acquired during their degrees, and offer recommendations as to the careers with which they may be successful (Gedrimiene et al., 2024). Thus, future research utilizing these tools would be of interest to gain insights regarding skills of PhD graduates and their potential careers.

Finally, it would also be of interest to include supervisors of the PhD candidates, policymakers, and the industry in the focus groups for future research studies. Currently, the focus groups only reflected the opinions and experiences of the alumni of the university. Future studies would benefit from the perspectives of those who have a direct impact upon the careers of PhD candidates and graduates.

### **CONCLUSION**

Through reviewing the various careers of the alumni of one public research university in Malaysia, the findings of this research study show that many of them experienced some challenges after the completion of their PhD degrees. While some successfully remained within the academic sector and maintained their careers as researchers or lecturers within these universities, others found positions within the industry sectors, and some even experienced challenges in adjusting their careers to those outside of the academic world.

Beyond finding jobs after the completion of their degrees, however, many of these alumni had to re-define themselves within their careers. Each of these individuals had to learn about their skills, to define their careers, and



# MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

to re-define themselves within the world of their specific career after earning their PhD degrees. Furthermore, each of these individuals had to develop methods for effectively leading themselves and their careers after earning their degrees. Such leadership skills are crucial to finding and securing positions in their desired careers.

Within the doctoral programs themselves, the information gathered from the alumni indicates the need to change the focus of some of these programs to provide for the development of these graduates of their careers. Despite the focus of these programs on developing their research skills, the graduates feel that they are not provided with opportunities to learn of other skills that are available outside of academia, or that they have any career experience with these other jobs (Etmanski, 2020; McAlpine, 2024). Thus, some focus on the development of skills in communication, leadership, and project management (Chuanyou et al., 2025; Tenschert et al., 2025). Furthermore, the programs could develop methods of allowing for graduates within those programs to define their careers within those programs, which would allow for them to lead themselves more effectively after their graduation from these programs (McAlpine & Emmioğlu, 2015).

Thus, while there are various challenges for the alumni within their careers, the recommendations for change to the doctoral programs within the university will allow for the graduates of those programs to lead themselves more effectively within the careers of their choice. Overall, this research study provided both empirical and theoretical knowledge of the experiences of PhD graduates within one public research university in Malaysia. Furthermore, by focusing upon their experiences in leading themselves and their careers, the program can provide the graduates of these doctoral programs with an understanding of their careers, and allow for them to proactively lead themselves towards their careers of choice in the rapidly-developing higher education and labor markets.

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