

The Mediating Effect of Convenient Skill Multiplier on the Relationship Between Educational Factors and Career Growth among Generation Z Professionals in Klang Valley, Malaysia.

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DOI: <https://doi.org/10.47772/IJRISS.2026.100700392>

Received: 18 July 2026; Accepted: 24 July 2026; Published: 03 August 2026

ABSTRACT

In Malaysia's evolving digital economy, the value of traditional higher education as a pathway to career success is being re-examined, especially in fast-paced fields like Information Technology (IT). Degree holders are no longer assured of promising career advancement purely on credentials. This study investigates how the Convenient Skill Multiplier as an informal digital upskilling paths such as online courses, coding bootcamps, and self-directed learning mediates the relationship between formal educational factors and career growth among Generation Z (Gen Z) IT professionals in the Klang Valley. Grounded in the Learning Ecologies Framework, Digital Capital Theory, and Protean Career Theory, the research examines three dimensions of higher education i.e. Knowledge Acquisition, Cognitive Development, Information Filtering as predictors of early-career growth. A quantitative cross-sectional survey of 210 Gen Z IT professionals was conducted, with stratified sampling ensuring representation across education levels and job roles. Statistical analyses revealed that higher education factors positively correlate with career growth, but their influence is significantly amplified when mediated by the Convenient Skill Multiplier. Notably, self-directed digital upskilling emerged as a strong predictor of career advancement in the rapidly evolving IT sector. The findings suggest a paradigm shift of rather than relying solely on academic credentials, Gen Z professionals should leverage on-demand learning resources to enhance employability and adapt to changing job demands. This allows educators, employers, and policymakers to integrate flexible, tech-driven learning opportunities into formal curricula and workforce development strategies to better support the career trajectories of Malaysia's emerging digital workforce.

Keywords: Career Growth, Convenient Skill Multiplier, Digital Learning, Generation Z, Information Technology

INTRODUCTION

In recent years, the role of higher education as the gateway to the good job has recently come under question, especially in the fast-paced professions such as IT (QuadC, 2023). Academic qualification is the visible vehicle for successful career trajectory, is sometimes being tested by realities in the marketplace, in which degree holders are no longer assured access to pathways through to career growth. This issue takes on added significance in the context of Gen Z (those born between 1997 and 2012), who are much less confident of the real-world applicability of degrees as they begin to enter the workplace. Artificial intelligence (AI) and automation is changing the world of work by creating a shift in the way the world is approaching towards their work (Semenova, 2023). These trends of technological advancement will change the landscape of work in the future for instance, the displacement of jobs, creation of new roles, and the necessity to up-skill and reskill IT professionals. Therefore, IT professionals and businesses need to adjust and response to this fast-evolving environment so that the future of work is more inclusive and sustainable. Gen Z is the first cohort to be completely digital native, grown up in mobile technology and social media world, and taught in online learning platforms (Indroputri, 2024). Gen Z is reshaping education, and career expectations globally and in Malaysia specifically, and according to surveys, there is a growing trend toward self-directed and technology-enhanced learning as well as a desire to focus on commonly available on-demand resources to upskill without a formal degree (Tee, 2024; Store, 2025).

Many Gen Z professionals around the world are beginning to question whether their education alone is enough to thrive in today's workforce. According to a global study, nearly seven in ten Gen Zs feel that their post-secondary education left them underprepared for real-world work demands prompting them to seek out additional skills on their own (Urquiza, 2020). While the IT industry is regarded as a key contributor to the national economic development and advancement, several graduates experience problems like skill mismatch, underemployment and academic content's low work-related relevance.

This study draws on the Learning Ecologies Framework to explore what truly makes higher education valuable in today's fast-changing world, especially for those in the IT field. This study focuses on three important areas: Knowledge Acquisition, Cognitive Development, and Information Filtering. These were chosen because to capture how learning does not just happen in classrooms anymore it flows across online platforms, peer interactions, and real-world experiences. Together, this reflects how Gen Z IT professionals build skills, adapt, and think critically in digital workspaces. This approach view that learning today is shaped by a mix of formal and informal environments, and that navigating this dynamic landscape is key to staying employable in an increasingly complex job market (Cope, 2020). This shift also highlights the increase of the importance of what this article calls the Convenient Skill Multiplier, a range of on-demand and flexible learning alternatives, such as online certifications, digital bootcamps and the development of on-the-job skills. These informal forms of upskilling are most popular among Gen Z IT professionals who believe they lead to skills that are more rapid, structured, and industry-focused than the more traditional forms of education like a degree. The career growth and development of Gen Z within Malaysia's IT industry, especially in the Klang Valley, is experiencing a revolution of its own kind. Although higher education was traditionally seen as an essential foundation for job progression, its independent worth is now emerging to be more questionable due to increased industry demands for vocationally relevant skills (Bhandari, 2023). Employers in a digital economy, now value dynamic skills such as ability to learn, problem-solving skills and digital fluency, skills that are frequently developed outside the sphere of formal learning, through avenues such as online platforms, micro-credentials, and community-based learning (Ragnedda, 2021; Hayes, 2018). Nonetheless, research interest has been somewhat redundant, concentrating instead of the separate influences of higher education and informal settings without considering their interactions (Stephany, 2024). This literature gap is substantive which is related to the Convenient Skill Multiplier, self-taught skill acquisition, could potentially provide a mediator and a moderator to magnify or replace formal education as influencer of career growth (Cope, 2020).

This study aims to investigate the effects of Knowledge Acquisition, Cognitive Development, and Information Filtering on Career Growth among Gen Z IT professionals in Klang Valley, with the Convenient Skill Multiplier (CSM) as a mediating factor. To achieve these aims, this study sought to answer the following questions:

- RQ 1: Does Knowledge Acquisition affects Career Growth among Gen Z IT professionals in Klang Valley?
- RQ 2: Does Cognitive Development affects Career Growth among Gen Z IT professionals in Klang Valley?
- RQ 3: Does Information Filtering affects Career Growth among Gen Z IT professionals in Klang Valley?
- RQ 4: How does a Convenient Skill Multiplier influences Career Growth among Gen Z IT professionals in Klang Valley?
- RQ 5: Is there a significant relationship between Convenient Skill Multiplier and Knowledge Acquisition among Gen Z IT professionals in Klang Valley?
- RQ 6: Is there a significant relationship between Convenient Skill Multiplier and Cognitive Development among Gen Z IT professionals in Klang Valley?
- RQ 7: Is there a significant relationship between Convenient Skill Multiplier and Information Filtering among Gen Z IT professionals in Klang Valley?
- RQ 8: Does Convenient Skill Multiplier mediates the relationship between Knowledge Acquisition and Career Growth among Gen Z IT professionals in Klang Valley?
- RQ 9: Does Convenient Skill Multiplier mediates the relationship between Cognitive Development and Career Growth among Gen Z IT professionals in Klang Valley?

RQ 10: Does Convenient Skill Multiplier mediates the relationship between Information Filtering and Career Growth among Gen Z IT professionals in Klang Valley?

LITERATURE REVIEW

In a time characterized by fast-paced digitalization and constant technological change, the link between higher education and careers in the Information Technology (IT) sector has increasingly been the focus of academic and policy interest (Brauner, 2022; Need, 2023). The conventional discourse around formal education viewed it as the collective body of knowledge acquisition and skills required for the smooth entry to the labor market with academia awards (Lauder, 2020). Yet, recently, within evolving digital markets such as Malaysia's Klang Valley (a developing tech centre), the old model is beginning to come under scrutiny (Abidin, 2021; Velu, 2020). Current employers value hands-on skills, flexibility, and/or industry-focused skill sets even more valuable or similar to qualifications in education (Stephany, 2024; Deloitte, 2022). This transformation is also influenced by the emergence of Gen Z in the workforce, a generation that exhibits a high level of technological literacy, thrives on flexible learning spaces and is very comfortable seeking and engaging with self-directed and even non-traditional educational platforms (Ng, 2023; Seemiller, 2019). For Gen Z IT professionals, their career has become increasingly about what this study refers to as the "Convenient Skill Multiplier" the idea that they are able to multiply their skill through the combination of online micro-credentialing, self-learnings and work-based experiential growth. Such pathways enable people to more rapidly meet the changing demands of the digital economy, often rerouting themselves from degree-based paths (Ragnedda, 2021; Natrayan, 2023, September).

Career Growth

The discussion of career advancement is embedded within the Protean Career Theory which suggests that career is self-directed and values-based instead of being dependent on organizational frameworks and formal hierarchies exclusively (Briscoe J. P., 2006; Briscoe J. P., 2012). The theory holds that more people currently define career success in terms of personal fulfillment, flexibility and ongoing skill development, as opposed to moving up the ladder and achieving particular job titles. This disposition has particular relevance to the IT industry, where individuals are compelled to clearly contribute to designing their own learning and career development pathways due to the rapidly changing pace of the field (McLean, 2023).

Value of Higher Education

There are three higher-education dimensions examined in this study context: Knowledge Acquisition, Cognitive Development, and Information Filtering.

Knowledge Acquisition

Based on the Learning Ecologies Framework, learning is enhanced by the dynamic interplay that takes place between formal educational institutions and informal, contextual learning experiences (Cope, 2020). Knowledge acquisition in higher education was founded to direct a curriculum, examination; subject specific such as software production, network systems, algorithmic are typical to organize the knowledge acquisition (Muzam, 2023). This provides a structured foundation for cognitive engagement and technical literacy in IT careers (Alenezi, 2023). This study proposes the following hypothesis:

H1: There is a significant relationship between Knowledge Acquisition towards Career Growth among Gen Z IT professionals in Klang Valley.

Cognitive Development

Cognitive development emerges, according to the Learning Ecologies Framework, however, as learners engage with complex, and often interdisciplinary learning environments that stretch their thinking, their resilience and their capacity to solve problems (Cope, 2020). In higher education, the development of cognition is fostered by engagement with case analysis, critical inquiry, and iterative experimentation, activities that promote critical thinking and intellectual flexibility (Almulla, 2023). This study proposes the following hypothesis:

H2: There is a significant relationship between Cognitive Development towards Career Growth among Gen Z IT professionals in Klang Valley.

Information Filtering

In post-secondary education, emphasis is on the development of the ability of the students to judge the credibility of the source, synthesize findings, and to apply their analytical thinking (Almulla, 2023); particularly when it comes to programs that are research-based or technical, as in IT and computer science. For young working adults of Gen Z generation, working in the information-rich ecosystem of Klang Valley, the aptitude to sieve through and use digital knowledge is an essential career skill. This study proposes the following hypothesis:

H3: There is a significant relationship between Information Filtering towards Career Growth among Gen Z IT professionals in Klang Valley.

Convenient Skill Multiplier (CSM)

Convenient Skill Multiplier is the idea that the learners are able to multiply their skill through the combination of online micro-credentialing, self-learning and work-based experiential growth. Such pathways enable people to more rapidly meet the changing demands of the digital economy, often rerouting themselves from even degree-based paths (Ragnedda, 2021; Natrayan, 2023, September). The widening gap between the academic curriculum and real-life industry demand re-emphasizes the urgency of re-thinking the practical value of university education for sustaining its growth in IT careers, especially for the new generation of creative talent (Tee P. K., 2024; Brown, 2020).

The CSM pathways enable people to rapidly meet the changing demands of the digital economy, often rerouting themselves from even degree-based paths (Ragnedda, 2021; Natrayan, 2023, September). For many Gen Z IT professionals, this self-propelled approach is supplemented by the Convenient Skill Multiplier, a set of digital apps and platforms that make self-learning and skills building easier than ever. This study proposes the following hypothesis:

H4: There is a significant relationship between Convenient Skill Multiplier towards Career Growth among Gen Z IT professionals in Klang Valley.

Knowledge Acquisition -> Convenient Skill Multiplier -> Career Growth

The knowledge acquisition brought through higher education is a basic building block for career development but is not complete without imposing informal upskilling on top of it in the constantly changing space of digital labor (Cope, 2020). Gen Z IT professionals in Klang Valley tend to be interested on internet certifications, video tutorials, and real-life practice to improve their theoretical foundation and to use their theoretical knowledge more efficiently in their jobs (Fitrianto, 2024). The Convenient Skill Multiplier helps them translate knowledge into applications quicker and reduces the sort of distance which can appear between this and traditional education. This implies that learning when followed by practical and flexible skill enhancement platforms such as Coursera has higher impact on career growth (Zamiri, 2024).

H5: There is a significant relationship between Convenient Skill and Knowledge Acquisition among Gen Z IT professionals in Klang Valley.

H8: There is a mediating effect of Convenient Skill Multiplier on the significant relationship between Knowledge Acquisition and Career Growth among Gen Z IT professionals in Klang Valley.

Cognitive Development -> Convenient Skill Multiplier -> Career Growth

Cognitive development, including aspects like problem solving, adaptive reasoning and reflective thinking emerges as an important output of higher education that allows people to be flexible in their career when it comes to dynamic industries (Almulla, 2023). In the IT industry, it is important that individuals can learn and reapply knowledge to solve different problems (Cope, 2020). Although the university learning environment inculcates these competencies through critical questioning and academic participation, most Gen Z IT professionals in Klang Valley sharpened their cognitive development by digital simulations, freelance works, and collaborative online communities (Fitrianto, 2024). The Convenient Skill Multiplier is therefore a dynamic cognitive gymnasium, an

environment where knowledge and personal growth can be put into practice and validated (Ragnedda, 2021). As such, access to and usage of digital upskilling platforms mediates cognitive development's impact on career progression (Stephany, 2024).

H6: There is a significant relationship between Convenient Skill Multiplier and Cognitive Development among Gen Z IT professionals in Klang Valley.

H9: There is a mediating effect of Convenient Skill Multiplier on the significant relationship between Cognitive Development and Career Growth among Gen Z IT professionals in Klang Valley.

Information Filtering -> Convenient Skill Multiplier -> Career Growth

Information filtering is used to decide the credibility, relevance and utility of digital information, and is now a need in the age of information overload (Cope, 2020). The development of these competencies is generally fostered in university by the kinds of critical exposure to academic research, discourse, and analytical models provided by university education (Almulla, 2023). However, Gen Z IT professionals tend to increase filtering skill and practices in their participation digital knowledge communities, such as Stack Overflow, LinkedIn Learning or Peer-curated repository (King, 2021). The convenient skill multiplier includes such platforms and allows real time determination of the selected content and its meaning and (Ragnedda, 2021). When these experts interact with different learning media, the skill of how to navigate through them and learn becomes a key driver for gaining visibility and mobility in technology related jobs (Zamiri, 2024). Therefore, this study posits that Convenient Skill Multiplier serves as mediator of the association between information filtering, and IT career growth outcomes.

H7: There is a significant relationship between Convenient Skill Multiplier and Information Filtering among Gen Z IT professionals in Klang Valley.

H10: There is a mediating effect of Convenient Skill Multiplier on the significant relationship between Information Filtering and Career Growth among Gen Z IT professionals in Klang Valley.

These ten hypotheses are conceptualised in the following research framework (Figure 1).

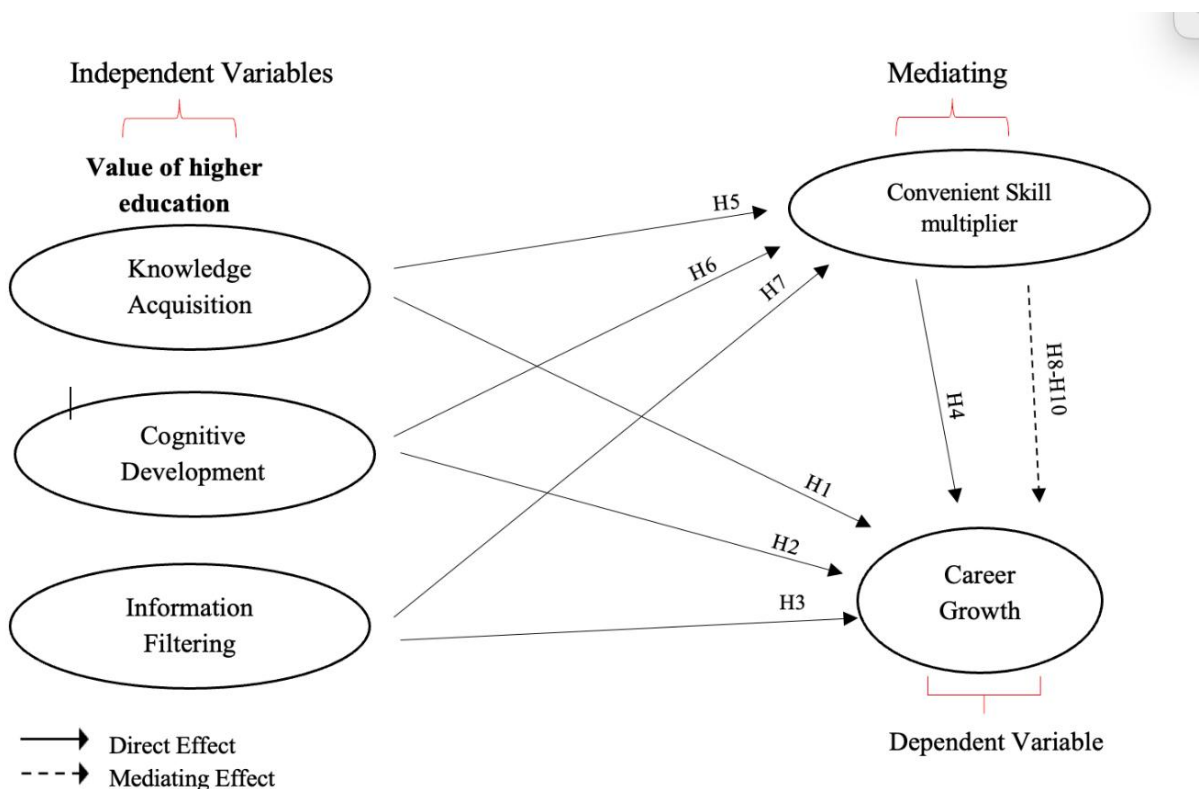


Figure 1: Conceptual Framework

METHODOLOGY

Population, Sampling and Respondents

This survey was conducted for Gen Z IT professionals in Klang Valley, Malaysia. The respondents can be characterized by being early career, having certain higher education qualifications (diploma, degree and industry certification), and are actively engaged in managing IT career development in a dynamic sector (Loh, 2021, April; Mazliana, 2023). Gen Z, described as those born between 1995 and 2012, is commonly known for being digitally native in a time when the technological advances of internet and mobile technology brought immediate and widespread impact (Seemiller, 2019; Ng, 2023).

The population covered under the sampling frame was the Gen Z population working in IT-related activities within the Klang Valley. Although there is no common source of such professionals, the data was gathered through various companies and societies as follows: 1. Private IT organizations or companies in Klang Valley 2. Alumni network of local government universities (IT course) 3. Gen Z IT professional in Gen Z Malaysian LinkedIn groups 4. IT and digital online communities.

Probability sampling method using Stratified Random sampling is used to generate the sampling of Gen Z IT professionals in Klang valley to ensure a structured sampling process and the diversity in professional background was adequately represented (Etikan, 2017; Levitt, 2018). The Gen Z IT professional in Klang Valley was divided into subgroups based on two characteristics: education level (e.g Diploma, Bachelor's, Master's) and job role (e.g. Software Developer, System Analyst, IT Support, Data Specialist). These variables were chosen because they relate to the impact of higher education and skills acquisition on career development. Besides, the internal validity of the study is improved by stratified random sampling ensuring every subgroup is systematically represented based on specific criteria (Bougie, 2019). This also enables comparative analysis to be done even within the subgroups to make more reliable and accurate conclusions. Stratification technique ensured that a wide range of different levels of education and professions within the IT industry were included proportionally (Loh, 2021, April; Hair, 2019).

A pilot study involving 38 respondents was performed to establish test reliability. Findings indicated that all construct reliabilities are sufficiently reliable (Cronbach's alpha value is greater than 0.70, indicating strong reliability by Pallant, 2016; 2020). For each construct, internal consistency will be evaluated using Cronbach's Alpha after the pilot.

Subsequently, the full-scale survey was distributed over a 10-day period, targeting 200 participants. G*Power 3.1 analysis was used to determine the minimum sample size required particularly the use of mediation analysis with SmartPLS given the inferential nature of this research. Assuming the above parameters in a multiple regression or structure model, it estimates a minimum of 77 respondents is required. However, to improve the reliability of bootstrapping procedures and structural analysis, the final target size was raised to at least 200, surpassing the minimum threshold advised for mediation analysis in PLS-SEM models. This number of cases provides sufficient power and adds to the validity of generalization to the population for the employment outcome at point of time of interest for this group when examining the impact of educational experiences on employment outcomes (Pearlson, 2019; Hair, 2019).

Instrument Development

The survey questions were derived from existing scales, linked to the Learning Ecologies Framework (Cope, 2020), Digital Capital Theory (Ragnedda, 2021), and also the Protean Career Orientation (Briscoe J. P., 2006). The questionnaire comprised four primary parts: Section A: Demographics. The following data was collected in this section: gender, age category, field of study, current highest qualification, whether upskilling has been completed, and choice of upskilling platform. Section B: Value of Higher Education. Under this section it consists of three sub-sections which is Knowledge Acquisition, Cognitive Development and Information Filtering. These are adapted from (Cope, 2020) Learning Ecologies Framework that draws attention to the constantly interacting nature of formal and informal learning processes. This section illustrates how traditional academic training contributes to foundational thinking and capacity-building skills of processing information in a digital society.

Section C: Convenient Skill Multiplier in this section focus on determining respondents' use of digital platforms, peer-based communities and self-directed learning to develop IT skills. Items were based on the Digital Capital Theory (Ragnedda, 2021). The items investigated the usage of online learning, coding websites, YouTube tutorials, and open-source contribution services and how useful the respondents think these resources are (Stephany, 2024). Section D: Career Development. The career advancement section was analyzed to define in terms of increased career growth, acknowledgment, promotion, and skills growth. Instruments were derived from validated scales in recent career development research (Kapur, 2024; Gilanie, 2022) and incorporated further modifications to the language to reflect non-linear, protean careers consistent with Protean Career Theory (Briscoe J. P., 2012). Section B to Section D had items measured by a 5-point Likert scale from 1 = Strongly Disagree to 5 = Strongly Agree, appropriate for perception-based responses (Ankur Joshi, 2015). The questionnaires were sent to the respondents through online Google survey form link.

RESULTS

In order to outline the demographic characteristics of the respondents, descriptive analysis is conducted which includes responses related to higher education variables, perceived IT growth, and convenient skill multipliers. Categorical variables such as age, education level, current job role, job level, and working experience in IT field (years) will be measured by using frequency distributions, while mean and standard deviation will be utilized to analyze continuous variables derived from the Likert-scale subjects.

Demographic Profiles

Table 1 below analysed data from 210 valid and completed responses collected from various IT professionals in the Klang Valley.

Table 1 Demographic Profile of the respondents: n=210

Variables	Categories	n=210	Percentage (%)
• Age	• 18-28	210	100
• Education Level	• SPM/STPM	2	0.95
	• Professional Certification	7	3.33
	• Diploma	26	12.38
	• Bachelor	130	61.9
	• Master	44	20.95
	• Current Pursuing a Degree or Diploma	1	0.48
• Current Job Role	• Software Engineer/ Developer	53	25.24
	• Data Analyst/ Data Scientist	50	23.81
	• System Admin/ Infrastructure Engineer	14	6.66
	• Cybersecurity Specialist	18	8.57
	• Web Developer/ UI/UX Designer	13	6.19
	• IT Support/ Helpdesk	31	14.76
	• QA/ Testing Engineer	11	5.24
	• Product/ Project Manager	11	5.24
	• Others	9	4.29
• Job Level	• Junior/ Entry-level	71	33.81
	• Associate/ Executive		
	• Senior Executive/ Senior Engineer	74	35.24
	• Lead/ Specialist	30	14.29
	• Manager/ Project Lead	14	6.66
	• Senior Manager/ HOD	16	7.62
	• Freelance/ Contract-based	5	2.38

Working Experience in IT Field	Less than 1 year	69	32.86
	2-3 years	71	33.81
	3-5 years	55	26.19
	6-9 years	13	6.19
	10 years or more	2	0.95

Correlation Analysis

A Pearson correlation analysis was conducted to examine the strength and direction of the relationship between the independent variables (Knowledge Acquisition, Cognitive Development and Information Filtering), mediating effect (Convenient Skill Multiplier) and the dependent variable (Career Growth). The correlation coefficient (r) ranges from -1 to +1, where values closer to ± 1 indicate stronger relationships. According to (Papageorgiou, 2022), the interpretation of the correlation coefficient is as follows: weak correlation ($r < 0.20$), moderate correlation ($0.30 < r < 0.50$), strong correlation ($0.60 < r < 0.80$), and very strong correlation ($0.90 < r < 1.00$), with the sign indicating the direction of the relationship.

Based on Papageorgiou (2022) on the interpretation of r in Pearson Correlation, all variables were positively and significantly correlated with Career Growth. Convenient Skill Multiplier exhibited the strongest positive correlation with Career Growth ($r = .673$, $p < .001$), followed by Information Filtering ($r = .609$, $p < .001$) and Cognitive Development ($r = .581$, $p < .001$), all of which demonstrate strong correlations. Knowledge Acquisition also had a strong but significant relationship with Career Growth ($r = .195$, $p = .005$). These results in Table 8 indicates that the higher the cognitive development, the greater the attention filtering capability, it can expect a positive career promotion. Knowledge Acquisition is less correlated, but statistically significant, so this is still an important contribution to a career growth.

Table 8 Summary of Correlation Analysis for all the variables

		KA	CD	IF	CSM	CG
Knowledge Acquisition	Pearson Correlation	1	.173*	.170*	.157*	.195**
	Sig. (2-tailed)		0.012	0.014	0.023	0.005
	N	210	210	210	210	210
Cognitive Development	Pearson Correlation	.173*	1	.550**	.641**	.581**
	Sig. (2-tailed)	0.012		<.001	<.001	<.001
	N	210	210	210	210	210
Information Filtering	Pearson Correlation	.170*	.550**	1	.608**	.609**
	Sig. (2-tailed)	0.014	<.001		<.001	<.001
	N	210	210	210	210	210
Convenient Skill Multiplier	Pearson Correlation	.157*	.641**	.608**	1	.673**
	Sig. (2-tailed)	0.023	<.001	<.001		<.001
	N	210	210	210	210	210
Career Growth	Pearson Correlation	.195**	.581**	.609**	.673**	1
	Sig. (2-tailed)	0.005	<.001	<.001	<.001	
	N	210	210	210	210	210

Table 9 Summary of Regression Analysis

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.54	0.307		1.757	0.08
	Knowledge Acquisition	0.066	0.055	0.059	1.208	0.229

Cognitive Development	0.167	0.061	0.176	2.728	0.007
Information Filtering	0.25	0.059	0.265	4.263	<.001
Convenient Skill Multiplier	0.391	0.068	0.39	5.776	<.001
a Dependent Variable: Career Growth					

Hypothesis Analysis

The first hypothesis (H1) stated that there is a significant relationship between knowledge acquisition and career growth among Gen Z IT professionals in Klang Valley. The Pearson correlation analysis revealed a statistically significant but weak positive relationship between Knowledge Acquisition and Career Growth ($r = .195$, $p = .005$). As the p-value is less than 0.005, this confirms a significant association. Therefore, Hypothesis 1 is accepted.

The second hypothesis (H2) stated that there is a significant relationship between cognitive development and career growth among Gen Z IT professionals in Klang Valley. The Pearson correlation between cognitive development and career growth is $r = .581$, with $p < .001$. As the significance value is less than 0.05, this indicates a strong and significant relationship between cognitive development and career growth. Hence, Hypothesis 2 is accepted.

The third hypothesis (H3) stated that there is a significant relationship between information filtering and career growth among Gen Z IT professionals in Klang Valley. The Pearson correlation between information filtering and career growth is $r = .609$, with a significance level of $p < .001$. This confirms that there is a significant relationship between information filtering and career growth. Therefore, Hypothesis 3 is accepted.

The fourth hypothesis (H4) stated that there is a significant relationship between convenient skill multiplier and career growth among Gen Z IT professionals in Klang Valley. The Pearson correlation between the convenient skill multiplier and career growth is $r = .673$, and $p < .001$, indicating a strong and significant relationship. Since the significance level is below 0.05, Hypothesis 4 is accepted.

The fifth hypothesis (H5) stated that there is a significant relationship between convenient skill multiplier and knowledge acquisition. Knowledge Acquisition was significantly correlated with Convenient Skill Multiplier ($r = .157$, $p = .023$). Therefore, Hypothesis 5 is accepted, indicating that there is a significant relationship between Knowledge Acquisition and Convenient Skill Multiplier.

The sixth hypothesis (H6) stated that there is a significant relationship between convenient skill multiplier and cognitive development. Cognitive Development was strongly correlated with Convenient Skill Multiplier ($r = .641$, $p < .001$) and with Career Growth ($r = .581$, $p < .001$). Thus, Hypothesis 6 is accepted.

The seventh hypothesis (H7) stated that there is a significant relationship between convenient skill multiplier and information filtering. Information Filtering was significantly correlated with Convenient Skill Multiplier ($r = .608$, $p < .001$). Hence, Hypothesis 7 is accepted.

The eighth hypothesis (H8) stated that there is a mediating effect of convenient skill multiplier on the relationship between knowledge acquisition and career growth among Gen Z IT professionals in Klang Valley. Knowledge Acquisition was significantly correlated with Convenient Skill Multiplier ($r = .157$, $p = .023$), and Convenient Skill Multiplier showed a strong correlation with Career Growth ($r = .673$, $p < .001$). However, the direct effect of Knowledge Acquisition on Career Growth was not statistically significant ($B = 0.075$, $p = .193$; 95% CI $[-0.035, 0.179]$) based on bootstrap analysis. This pattern reflects a fully mediated effect, where the influence of Knowledge Acquisition on Career Growth operates entirely through the Convenient Skill Multiplier (Preacher, 2008). Therefore, Hypothesis 8 is accepted.

The ninth hypothesis (H9) stated that there is a mediating effect of convenient skill multiplier on the relationship between cognitive development and career growth among Gen Z IT professionals in Klang Valley. Cognitive Development had a strong positive correlation with Convenient Skill Multiplier ($r = .641$, $p < .001$) and with Career Growth ($r = .581$, $p < .001$). Bootstrap regression confirmed that Cognitive Development significantly

predicted Convenient Skill Multiplier ($B = 0.554, p < .001$) and Career Growth ($B = 0.330, p < .001$; 95% CI [0.212, 0.463]). These findings indicate a partial mediation effect, as both direct and indirect paths are significant (Baron, 1986). Hence, Hypothesis 9 is accepted.

The tenth hypothesis (H10) stated that there is a mediating effect of convenient skill multiplier on the relationship between information filtering and career growth among Gen Z IT professionals in Klang Valley. Information Filtering was significantly associated with Convenient Skill Multiplier ($r = .608, p < .001$) and with Career Growth ($r = .609, p < .001$). The bootstrap analysis revealed a significant direct effect of Information Filtering on Career Growth ($B = 0.383, p < .001$; 95% CI [0.246, 0.520]). The presence of both significant direct and indirect effects points to a partial mediation by the Convenient Skill Multiplier (Preacher, 2008). Therefore, Hypothesis 10 is accepted.

DISCUSSION AND CONCLUSION

This study advances understanding of how higher education translates into early career outcomes for Gen Z IT professionals in the Klang Valley by integrating three education-derived factors knowledge acquisition, cognitive development, and information filtering with the convenient skill multiplier (CSM). Conceptually, the model clarifies that higher education forms the foundation, while CSM through online micro-credentials, hands-on projects, peer communities, and self-directed learning converts those foundations into realised career growth. Empirically, the findings show consistent positive relationships between the higher-education factors and career growth, with CSM demonstrating the strongest association and mediating the effects of the education variables. These results in Table 8 indicates that the higher the cognitive development, the greater the attention filtering capability, it can expect a positive career promotion. Even though, Knowledge Acquisition is less correlated, but statistically significant, so this is still an important contribution to a career growth. Practically, the results suggest that universities should pair discipline content with flexible, industry-facing upskilling (micro-credentials, capstone projects, hackathons, and digital portfolios), while employers should ensure structured upskilling pathways, project rotations, and recognition for demonstrable skills.

This research has limitations. The cross-sectional, self-report survey design restricts causal inference and depth of individual experience; data collection overlapped a festive period, which may have affected response patterns; and the focus on Klang Valley Gen Z IT professionals limits generalisability to other regions and job families. Future studies should expand sampling using longitudinal design and include other professionals from different industries, regions, and generations would improve the applicability and generalizability beyond Klang Valley, triangulate survey data with interviews or focus groups, track outcomes longitudinally, and test interventions that combine formal coursework with targeted skill-multiplier programs across different organisational contexts.

Overall, the study demonstrates that career growth in today's IT labour market is maximized when formal higher education is actively multiplied by convenient, practice-centered upskilling a pathway that aligns the needs of learners, employers, and policymakers in Malaysia's evolving digital economy.

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