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## Perceived Value of Doctoral Education Among Cambodian Master's Degree Students

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**Abstract:** This study investigates Cambodian master's degree students' perceptions of the value of doctoral education and examines the influence of beliefs in ability to complete, joyfulness, usefulness, worthiness, and stress. Adopting a mixed-methods design, quantitative data from 165 respondents were analysed using SPSS 26 and SmartPLS 4, while qualitative insights were derived from 10 semi-structured interviews analysed with NVivo 15. The quantitative results showed that beliefs in ability to complete, joyfulness, and perceived usefulness had significant positive effects on perceived doctoral value, whereas worthiness and stress had no significant influence. Moderation analysis further indicated that stress did not moderate the relationships between the predictors and perceived value. Qualitative findings corroborate these results, revealing that students feel confident in their ability to complete doctoral studies, experience joy from intellectual growth and supportive learning environments, and view doctoral education as instrumental for career advancement and personal development. Although doctoral degrees are associated with respect and legitimacy, inconsistent societal recognition weakens the role of worthiness. Stress is experienced as both motivating and challenging but does not shape value perceptions. Overall, perceived doctoral value is driven primarily by self-belief, positive emotions, and practical relevance. This study contributes contextual evidence from Cambodia and offers insights for institutions seeking to attract and support future doctoral candidates.

**Keywords:** Perceived Value, Doctoral Education, Cambodian Master's Degree Students, Higher Education, PhD Program, Expectancy-Value Theory.

### INTRODUCTION

Education plays a critical role in developing skilled human resources and supporting sustainable socio-economic development worldwide. Investment in vocational and higher education enhances workforce competitiveness, promotes employability, and strengthens national innovation capacity (Kokkinopoulou et al., 2026). In Cambodia, continuous education reforms have been implemented to improve quality, accessibility, inclusivity, and transparency across all levels of education, including higher education (Donaher & Wu, 2020).



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Doctoral education is increasingly recognized as a cornerstone for building research capacity and academic leadership within higher education systems (Atyayi et al., 2025). Cambodian universities have made notable efforts to expand doctoral programs in response to national development needs. However, doctoral enrolment remains limited due to persistent challenges such as inadequate research infrastructure, financial constraints, shortages of qualified supervisors, time pressures, and socio-cultural barriers (Chiv et al., 2025). These challenges raise concerns about how prospective doctoral candidates perceive the value of pursuing PhD studies.

Although many young people aspire to pursue doctoral education, successful participation is strongly influenced by individuals' beliefs in their ability to complete such demanding programs. Self-confidence, responsibility, and perceived capability are key personal traits associated with persistence and success in PhD studies (Sørensen, 2016). Conversely, a lack of confidence and fear of failure may discourage potential candidates, as doctoral study is often perceived as overwhelming due to its emphasis on independent research, long duration, and uncertainty (Cuschieri, 2021). Previous studies suggest that doctoral outcomes are shaped by a combination of internal factors (e.g., motivation and self-regulation), external conditions (e.g., financial support and work-life balance), and program-related elements (e.g., supervision quality and institutional support) (Acharya et al., 2024; Van Rooij et al., 2021).

Affective factors further influence doctoral aspirations. Positive emotions such as joyfulness enhance academic engagement, motivation, and achievement in higher education contexts (Cao et al., 2024). In doctoral programs, student satisfaction depends on both hygienic factors, including workload, departmental support, and supervisory relationships, and motivational factors such as interest in research and a sense of achievement (Dericks et al., 2019). While doctoral completion offers substantial academic and career benefits, stress and exposure to stressful events may reduce students' intentions to pursue PhD studies (Fraguas-Sánchez et al., 2023; Stojadinović et al., 2025).

Despite growing international literature on doctoral education, empirical evidence on how Cambodian master's degree students perceive the value of doctoral studies remains scarce. Addressing this gap, the present study examines Cambodian master's degree students' perceived



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value of doctoral education by assessing the effects of perceived benefits to ability, joyfulness, usefulness, worthiness, and stress. Additionally, this study investigates the moderating role of stress in the relationships between the positive dimensions and perceived value. By focusing on an under-researched developing country context, this study contributes to the doctoral education literature and provides practical insights for higher education institutions and policymakers seeking to strengthen doctoral participation in Cambodia.

## LITERATURE REVIEW

### Perception of Doctoral Education's Value

Education is a key driver of economic growth and social development, as it produces skilled individuals who enhance productivity and national competitiveness (Kokkinopoulou et al., 2026). Countries with strong higher and doctoral education systems tend to achieve better economic outcomes because educated individuals contribute to innovation, higher income levels, and long-term economic growth (Gu, 2024). In this context, doctoral education plays a critical role in advancing human capital and research capacity.

Doctoral education generates both economic and social value, including improved employment prospects, research productivity, innovation, and knowledge dissemination. However, individuals' perceptions of the value of a doctoral degree vary depending on their career goals and personal motivations. While some regard doctoral study as essential for academic careers, others view it as a means of acquiring transferable skills relevant to industry and professional sectors. Beyond instrumental benefits, doctoral education is also valued for intrinsic reasons such as intellectual curiosity and the desire to contribute to society (Read et al., 2024).

Guided by Expectancy–Value Theory, individuals' decisions to pursue doctoral education depend on their perceived ability to succeed and the value they attach to doctoral outcomes. Personal motivation—driven by both intrinsic and extrinsic factors—plays a central role in shaping doctoral intentions and persistence (Kristiana & Kuswandono, 2024). Understanding these perceptions is essential for strengthening doctoral participation and completion.



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## **Beliefs in Ability and Perceived Value**

Beliefs in ability refer to individuals' perceptions of their own capacity to succeed in a specific domain (Robinson & Bond, 2025), while perceived value represents an overall evaluation of anticipated benefits relative to associated costs (Yeboah, 2024). Prior research highlights self-efficacy—the belief in one's capability to perform successfully—as a key determinant of perceived value and academic engagement. Students with higher self-efficacy tend to assign greater value to academic tasks, which in turn enhances satisfaction and persistence (Hirosawa et al., 2024). Importantly, perceptions of both ability and value are dynamic rather than fixed, evolving in response to new information, experiences, and contextual influences. These changes may positively or negatively shape students' academic attitudes and outcomes over time (Neubauer & Hofer, 2022).

## **Joyfulness and Perceived Value**

Joyfulness is linked to perceived value, as positive emotional experiences play a central role in shaping satisfaction, trust, and overall value judgments. Perceived value reflects an individual's subjective assessment of benefits relative to costs, and pleasant emotions such as joyfulness amplify perceived benefits while reducing perceived sacrifices (Yum & Kim, 2024). Empirical evidence indicates that joyful experiences enhance perceived value and lead to higher satisfaction by reinforcing the benefits individuals associate with an activity (Li et al., 2026).

In educational contexts, joyfulness enhances motivation, engagement, and memory, thereby supporting academic achievement and fostering positive attitudes toward learning. Students who experience joy in learning are more likely to value education, recognize its relevance to their personal identity, and derive a sense of accomplishment and social enjoyment from academic activities. Such positive educational experiences strengthen individuals' beliefs in the long-term benefits of education, not only for future career outcomes but also for personal development and well-being (Arbabi et al., 2025).



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## Usefulness and Perceived Value

Perceived usefulness is a key dimension of perceived value, reflecting how education supports career and professional goals (Morar, 2013). In the context of doctoral studies, students who perceive a PhD as useful are more likely to pursue it to enhance employability, gain advanced competencies, and qualify for senior or specialized positions (Alpaydın & Kültür, 2022). Higher education develops both technical expertise and transferable skills—such as critical thinking, communication, and problem-solving—valued by employers (Giotis et al., 2025; West, 2000). By linking academic attainment to tangible career outcomes, perceived usefulness strengthens students' overall perception of doctoral education's value.

## Worthiness and Perceived Value

Worthiness, often conceptualized as attainment value, reflects the degree to which individuals perceive an activity as central to their self-identity and personal goals. It influences motivation, engagement, and performance by encouraging individuals to approach tasks with higher effort and quality (Pukkeeree et al., 2020). Students with higher attainment value are more likely to recognize courses or academic resources as important, which enhances behavioural engagement and academic achievement, even when expectations of success are low (Putwain et al., 2019). Beyond academics, higher perceived value in social and professional contexts is linked to respect, recognition, and a sense of significance, which fosters self-worth, creativity, and satisfaction. When individuals perceive themselves as worthy, they are more likely to pursue higher goals and engage in innovative behaviours (Ellemers et al., 2013; Zhao et al., 2022).

## Stress and Perceived Value

Stress influences academic performance in both positive and negative ways. While manageable stress can motivate students to achieve higher outcomes, excessive stress reduces confidence, undermines motivation, and diminishes the perceived value of a degree, potentially leading to delays, absenteeism, or dropout (Jisang & Cao, 2025; Iqra, 2024). Students facing high stress may view their doctoral studies as less meaningful, affecting engagement and academic persistence.



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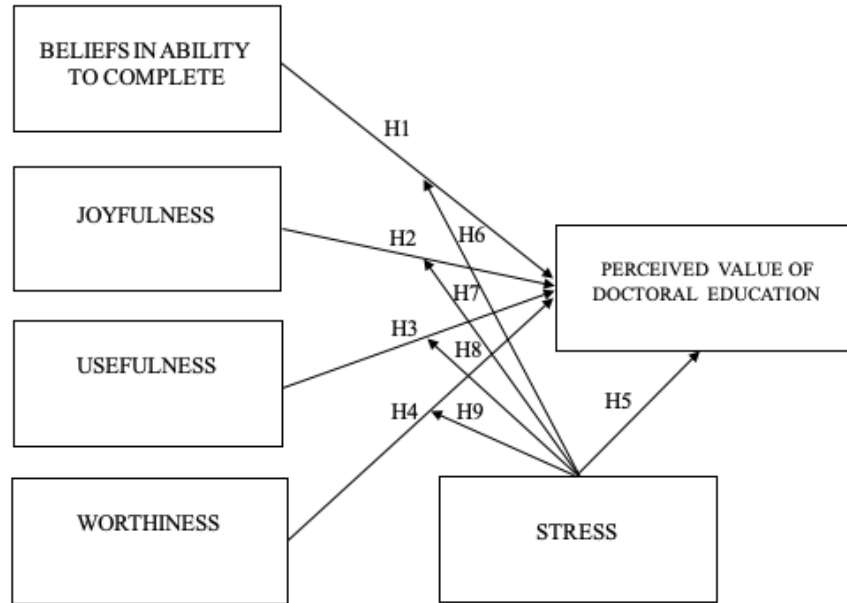
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Although research has examined the economic and social benefits of higher education, few studies investigate how doctoral students themselves perceive the value of their education. Prior work often emphasizes career advancement while neglecting non-economic outcomes such as intellectual growth, social contribution, and personal fulfilment. Psychological and emotional factors including stress and joyfulness—are also underexplored, and constructs like usefulness, worthiness, and self-efficacy are rarely studied together.

Furthermore, most evidence comes from Western contexts, leaving a gap in understanding how cultural and contextual factors shape doctoral education perceptions in developing countries, particularly Cambodia. This study addresses this gap by examining the cognitive, affective, and social determinants of perceived doctoral value among Cambodian master's students.

## **Theoretical and Conceptual Frameworks**

In this research study, the proposed variables are drawn from the constructs of the Expectancy-Value Theory, where expectancy is determined as beliefs in ability to complete a doctoral degree successfully (BA), intrinsic value as joyfulness or interest in doctoral learning process (J), utility value as usefulness for achieving personal or career goals (U), attainment value as worthiness of respect or capability (W), and the perception of value of doctoral education as perceived value of doctoral education (PV). Along with this, stress (S) is examined as a proposed moderator of the relationship between the BA, J, U, W and PV. The following is the study's conceptual framework model.



*Figure 1. Conceptual Framework Model*

## Research Questions

Based on the research objectives and proposed model, this study specifically addresses the following research questions:

1. What are Cambodian master's degree students' perception of doctoral education value regarding beliefs in ability to complete, joyfulness, usefulness, worthiness, and stress?
2. Is there a significant relationship between beliefs in ability to complete, joyfulness, usefulness, worthiness, stress, and perceived value of doctoral education among Cambodian master's degree students?
3. Does stress moderate the relationship between beliefs in ability to complete, joyfulness, usefulness, worthiness, and perceived value of doctoral education among Cambodian master's degree students?

## Hypotheses

*Hypothesis 1:* A positive and significant relationship exists between beliefs in ability to complete and perceived value of doctoral education.



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*Hypothesis 2:* A positive and significant relationship exists between joyfulness and perceived value of doctoral education.

*Hypothesis 3:* A positive and significant relationship exists between usefulness and perceived value of doctoral education.

*Hypothesis 4:* A positive and significant relationship exists between worthiness and perceived value of doctoral education.

*Hypothesis 5:* A positive and significant relationship exists between stress and perceived value of doctoral education.

*Hypothesis 6:* Stress significantly moderates the relationship between beliefs in ability to complete and perceived value of doctoral education.

*Hypothesis 7:* Stress significantly moderates the relationship between joyfulness and perceived value of doctoral education.

*Hypothesis 8:* Stress significantly moderates the relationship between usefulness and perceived value of doctoral education.

*Hypothesis 9:* Stress significantly moderates the relationship between worthiness and perceived value of doctoral education.

## Measures

In this study, there are six variables, including beliefs in ability to complete, joyfulness, usefulness, worthiness, stress, and perceived value of doctoral education. Each variable is measured by different scale items. Perceived value of doctoral education is measured by 7 scale items that measure overall benefits, cost perception, usefulness, social value, and were adapted from the previous studies by (Alves, 2011; Amado-Mateus et al., 2023; Zeithaml, 1988). Beliefs in ability to complete refers to student's confidence in their ability to complete their degree successfully despite difficulties, were measured by 7 scale items adapted from research conducted by Chemers et al. (2001). 7 scale items adapted from Zhang et al. (2021) are used to measure joyfulness. 5 scale items used for measuring usefulness are adapted from the research by Alturki and Aldraiweesh (2022). Worthiness are measured by 6 scale items adapted from the research by



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Shah and Shah (2018). In addition, 8 scale items adapted from Bedewy and Gabriel (2015) are used to measure stress.

## METHOD

This study employed a mixed-methods approach to examine Cambodian master's students' perceptions of doctoral education value. A five-point Likert scale survey was administered online to 194 participants, with pilot testing conducted to ensure construct validity and reliability. Purposive sampling was used to select respondents. Quantitative data were analysed using SPSS 27 for reliability, descriptive statistics, and demographic profiling, and SmartPLS 4 for structural equation modelling to assess relationships between predictor variables and perceived doctoral value. Complementary qualitative data were collected through semi-structured interviews to explore students' perceptions of ability, interest, usefulness, worthiness, and stress, and were analysed using NVivo 15. This design allowed integration of quantitative and qualitative insights to provide a comprehensive understanding of doctoral education perceptions.

## RESULTS AND DISCUSSION

### Results

The data analysis in this study was divided into two sections, including quantitative data analysis and quantitative data analysis, as shown below.

### Quantitative Data Analysis

#### Data Screening

Before beginning the primary analysis of this study, the dataset was screened and cleaned to guarantee quality, completeness, and dependability to prevent data errors. Outliers, respondent's misconduct, missing, and impermissible data were properly screened using SPSS. The results showed that there were no missing and impermissible data problems. One item PV3 showed extreme outliers based on boxplot inspection, but it did not affect the reliability and validity of construct PV. Therefore, this item was retained. The standard deviation values of 29 respondents



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were deleted ( $< .25$ ). As a result, 165 respondent data points were utilized to analyse and produce quantitative data analysis results.

## Respondent Profile

The final sample comprised 165 master's degree students, including 97 males (58.8%) and 68 females (41.2%). Most respondents were aged 25–34, followed by younger and older age groups. A majority worked in the private sector (68.5%), with the remainder employed in the public sector (31.5%). Most participants reported 0–12 years of work experience, with fewer having longer professional experience.

## Main Constructs' Descriptive Statistics

Descriptive statistics indicated that Cambodian master's students held positive perceptions of doctoral education, with mean scores of perceived value (PV = 4.042, SD = 0.608), beliefs in ability to complete (BA = 3.732, SD = 0.740), joyfulness (J = 3.652, SD = 0.650), usefulness (U = 3.897, SD = 0.670), worthiness (W = 3.819, SD = 0.762), and stress (S = 3.619, SD = 0.600), as shown in Table 1. Students expressed confidence in their capacity to complete doctoral studies, derived satisfaction, and joy from learning, and recognized the relevance of a PhD for personal and career goals. While stress was acknowledged as influencing academic performance, overall perceptions emphasized capability, emotional engagement, and practical value.

| Constructs                                 | Mean  | Std. Deviation |
|--|-------|----------------|
| Perceived Value of Doctoral Education (PV) | 4.042 | 0.608          |
| Beliefs in Ability to Complete (BA)        | 3.732 | 0.740          |
| Joyfulness (J)                             | 3.652 | 0.650          |
| Usefulness (U)                             | 3.897 | 0.670          |
| Worthiness (W)                             | 3.819 | 0.762          |
| Stress (S)                                 | 3.619 | 0.600          |

*Table 1. Descriptive Statistics for Main Constructs*

## Measurement Model Assessment

The measurement model was assessed to evaluate construct quality through factor loadings, multicollinearity, reliability, and validity. As shown in Table 2, all indicator loadings exceeded the



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minimum threshold of 0.50, with most above the preferred level of 0.70 (Vinzi et al., 2010; Hair et al., 2018). Four items of the stress construct (S1–S4) had loadings between 0.40 and 0.70; however, as composite reliability (CR = 0.896) and average variance extracted (AVE = 0.521) exceeded recommended thresholds, these items were retained (Hair et al., 2017).

Multicollinearity was assessed using variance inflation factors (VIF), with all values below 5, indicating no collinearity issues (Hair et al., 2021). Reliability was confirmed as Cronbach's alpha, rho\_a, and composite reliability all exceeded 0.70, with rho\_a falling between Cronbach's alpha and composite reliability, indicating strong internal consistency (Hair et al., 2017, 2021). Convergent validity was established with AVE values above 0.50. Discriminant validity was confirmed using the Fornell–Larcker criterion and the HTMT ratio, with all HTMT values below the conservative threshold of 0.85.

| Constructs                          | Items | Factor Loadings | Variance Inflation Factor (VIF) | Cronbach's alpha | Composite reliability (rho_a) | Composite reliability (rho_c) | Average variance extracted (AVE) |
|-------------------------------------|-------|-----------------|---------------------------------|------------------|-------------------------------|-------------------------------|----------------------------------|
| Beliefs in Ability to Complete (BA) | BA1   | 0.781           | 2.402                           | 0.942            | 0.944                         | 0.953                         | 0.743                            |
|                                     | BA2   | 0.867           | 3.512                           |                  |                               |                               |                                  |
|                                     | BA3   | 0.881           | 3.570                           |                  |                               |                               |                                  |
|                                     | BA4   | 0.892           | 3.741                           |                  |                               |                               |                                  |
|                                     | BA5   | 0.856           | 3.364                           |                  |                               |                               |                                  |
|                                     | BA6   | 0.870           | 3.816                           |                  |                               |                               |                                  |
|                                     | BA7   | 0.882           | 4.284                           |                  |                               |                               |                                  |
| Joyfulness (J)                      | J1    | 0.718           | 1.668                           | 0.913            | 0.915                         | 0.931                         | 0.658                            |
|                                     | J2    | 0.842           | 2.800                           |                  |                               |                               |                                  |
|                                     | J3    | 0.802           | 2.376                           |                  |                               |                               |                                  |
|                                     | J4    | 0.781           | 1.957                           |                  |                               |                               |                                  |
|                                     | J5    | 0.831           | 2.763                           |                  |                               |                               |                                  |
|                                     | J6    | 0.867           | 3.122                           |                  |                               |                               |                                  |
|                                     | J7    | 0.829           | 2.432                           |                  |                               |                               |                                  |
| Usefulness (U)                      | U1    | 0.817           | 2.032                           | 0.911            | 0.912                         | 0.934                         | 0.738                            |
|                                     | U2    | 0.872           | 2.784                           |                  |                               |                               |                                  |
|                                     | U3    | 0.859           | 2.555                           |                  |                               |                               |                                  |
|                                     | U4    | 0.850           | 2.749                           |                  |                               |                               |                                  |



|  |     |       |       |       |       |       |       |
|--|-----|-------|-------|-------|-------|-------|-------|
|  | U5  | 0.898 | 3.461 |       |       |       |       |
| Worthiness (W)                             | W1  | 0.837 | 2.708 | 0.935 | 0.936 | 0.948 | 0.754 |
|  | W2  | 0.847 | 2.978 |       |       |       |       |
|  | W3  | 0.882 | 3.359 |       |       |       |       |
|  | W4  | 0.889 | 3.497 |       |       |       |       |
|  | W5  | 0.877 | 3.205 |       |       |       |       |
|  | W6  | 0.878 | 3.646 |       |       |       |       |
| Stress (S)                                 | S1  | 0.626 | 1.752 | 0.873 | 0.908 | 0.896 | 0.521 |
|  | S2  | 0.654 | 2.081 |       |       |       |       |
|  | S3  | 0.691 | 2.608 |       |       |       |       |
|  | S4  | 0.657 | 2.165 |       |       |       |       |
|  | S5  | 0.787 | 1.974 |       |       |       |       |
|  | S6  | 0.732 | 2.033 |       |       |       |       |
|  | S7  | 0.780 | 2.173 |       |       |       |       |
|  | S8  | 0.822 | 2.808 |       |       |       |       |
| Perceived Value of Doctoral Education (PV) | PV1 | 0.755 | 1.997 | 0.906 | 0.908 | 0.925 | 0.640 |
|  | PV2 | 0.799 | 2.231 |       |       |       |       |
|  | PV3 | 0.786 | 2.072 |       |       |       |       |
|  | PV4 | 0.817 | 2.358 |       |       |       |       |
|  | PV5 | 0.798 | 2.221 |       |       |       |       |
|  | PV6 | 0.812 | 2.471 |       |       |       |       |
|  | PV7 | 0.828 | 2.661 |       |       |       |       |

**Table 2.** Factor Loadings, Multicollinearity of Constructs, Reliability, Convergent Validity

|    | BA           | J            | U            | W            | S            | PV           |
|----|--------------|--------------|--------------|--------------|--------------|--------------|
| BA | <b>0.862</b> | 0.718        | 0.585        | 0.652        | 0.366        | 0.606        |
| J  | 0.667        | <b>0.811</b> | 0.705        | 0.646        | 0.478        | 0.678        |
| U  | 0.541        | 0.643        | <b>0.859</b> | 0.797        | 0.508        | 0.632        |
| W  | 0.613        | 0.597        | 0.735        | <b>0.868</b> | 0.543        | 0.538        |
| S  | 0.376        | 0.488        | 0.509        | 0.537        | <b>0.722</b> | 0.405        |
| PV | 0.563        | 0.619        | 0.578        | 0.500        | 0.393        | <b>0.800</b> |

**Table 3.** Fornell & Larcker Criterion, and Heterotrait-Monotrait Ratio

Note: *Bold, diagonal, and italicized elements are the square roots of Average Variance Extracted-AVE. Below the diagonal ones are the correlations between the values of constructs (Fornell & Larcker Criterion), and above are the values of Heterotrait-Monotrait Ratio-HTMT, BA = Beliefs in Ability to Complete, J = Joyfulness, U = Usefulness, W = Worthiness, S = Stress, PV = Perceived Value of Doctoral Education.*



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## Structural Model Assessment

The evaluation of the relationships between the study's constructs is known as structural model assessment. This is done by examining the path coefficients and statistically significant relationships between independent variables, such as beliefs in ability to complete, joyfulness, usefulness, worthiness, and moderator of stress, and dependent variables of perceived value of doctoral education.

## Full Structural Path Analysis

Structural path analysis evaluated the five hypotheses regarding predictors of perceived value of doctoral education. Beliefs in ability to complete ( $B = 0.206$ ,  $t = 2.386$ ,  $p = 0.017$ ), joyfulness ( $B = 0.287$ ,  $t = 3.141$ ,  $p = 0.002$ ), and usefulness ( $B = 0.264$ ,  $t = 2.760$ ,  $p = 0.006$ ) all had significant positive effects on perceived value, supporting Hypotheses 1–3. In contrast, worthiness ( $B = 0.001$ ,  $t = 0.013$ ,  $p = 0.990$ ) and stress ( $B = 0.072$ ,  $t = 0.796$ ,  $p = 0.426$ ) had no significant impact, leading to rejection of Hypotheses 4 and 5. Overall, the results confirmed that perceived doctoral value was driven primarily by self-belief, positive emotions, and perceived usefulness, while social recognition and stress did not significantly influence students' perceived value of doctoral education. Full path coefficients are presented in Table 4.

| Hypothesis   | B     | SE    | T     | P     | Results       |
|--------------|-------|-------|-------|-------|---------------|
| H1: BA -> PV | 0.206 | 0.086 | 2.386 | 0.017 | Supported     |
| H2: J -> PV  | 0.287 | 0.091 | 3.141 | 0.002 | Supported     |
| H3: U -> PV  | 0.264 | 0.096 | 2.760 | 0.006 | Supported     |
| H4: W -> PV  | 0.001 | 0.109 | 0.013 | 0.990 | Not Supported |
| H5: S -> PV  | 0.072 | 0.091 | 0.796 | 0.426 | Not Supported |

**Table 4.** Path Analysis

Note: *H* = Hypothesis, *B* = Beta Coefficient, *SE* = Standard Error, *T* = T-Statistics, *P* = Probability *P* (Value), *BA* = Beliefs in Ability to Complete, *J* = Joyfulness, *U* = Usefulness, *W* = Worthiness, *S* = Stress, *PV* = Perceived Value of Doctoral Education.

## Moderation Analysis

Moderation analysis examined whether stress moderates the relationships between beliefs in ability, joyfulness, usefulness, worthiness, and perceived value of doctoral education. The results



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showed that stress did not significantly moderate any of these relationships: beliefs in ability ( $B = -0.055$ ,  $t = 0.597$ ,  $p = 0.551$ ), joyfulness ( $B = -0.027$ ,  $t = 0.261$ ,  $p = 0.794$ ), usefulness ( $B = -0.068$ ,  $t = 0.707$ ,  $p = 0.479$ ), or worthiness ( $B = 0.167$ ,  $t = 1.628$ ,  $p = 0.103$ ). Consequently, Hypotheses 6–9 were not supported. These findings indicated that stress neither strengthened nor weakened the effects of cognitive, emotional, or social factors on students' perceived value of doctoral education. Full results are presented in Table 5.

| Hypothesis   | B      | SE    | T     | P     | Results       |
|--------------|--------|-------|-------|-------|---------------|
| S x BA -> PV | -0.055 | 0.092 | 0.597 | 0.551 | Not Supported |
| S x J -> PV  | -0.027 | 0.103 | 0.261 | 0.794 | Not Supported |
| S x U -> PV  | -0.068 | 0.097 | 0.707 | 0.479 | Not Supported |
| S x W -> PV  | 0.167  | 0.103 | 1.628 | 0.103 | Not Supported |

*Table 5. Moderation Analysis*

Note:  $H$  = Hypothesis,  $B$  = Beta Coefficient,  $SE$  = Standard Error,  $T$  = T-Statistics,  $P$  = Probability  $P$  (Value),  $BA$  = Beliefs in Ability to Complete,  $J$  = Joyfulness,  $U$  = Usefulness,  $W$  = Worthiness,  $S$  = Stress,  $PV$  = Perceived Value of Doctoral Education.

## Model Explanatory Power and Predictive Relevance

The model's explanatory power was assessed using  $R^2$ , which indicates the variance in endogenous constructs explained by exogenous variables (Shmueli & Koppius, 2011). As shown in Table 6 and Figure 2, the  $R^2$  value for perceived value of doctoral education was 0.483, indicating weak-to-moderate explanatory power based on established thresholds (Hair et al., 2017).

Effect size ( $f^2$ ) was examined to assess the contribution of each exogenous construct by observing changes in  $R^2$  when a predictor was omitted. Following Cohen's (1988) guidelines, beliefs in ability, joyfulness, and usefulness showed small effects ( $f^2 = 0.038$ – $0.051$ ), whereas worthiness and stress demonstrated negligible effects ( $f^2 = 0.000$ – $0.006$ ).

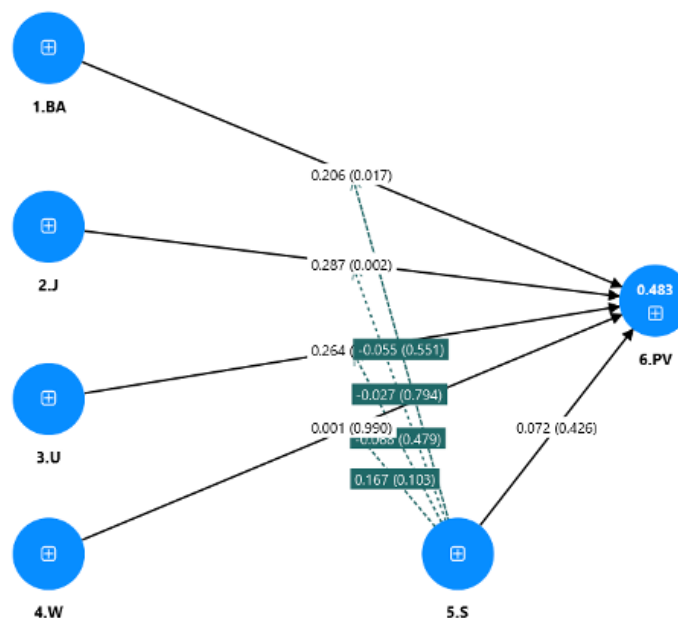
Predictive relevance was evaluated using  $Q^2$ . The  $Q^2$  value for perceived value was 0.377, exceeding zero and indicating strong predictive relevance (Hair et al., 2017). Overall, the results confirmed adequate explanatory and strong predictive capability of the model.

| Exogenous Constructs/<br>Predictors | Endogenous Construct/<br>Outcome | R <sup>2</sup> | f <sup>2</sup> | Q <sup>2</sup> |
|-------------------------------------|----------------------------------|----------------|----------------|----------------|
| BA -> PV                            | PV                               | 0.483          | 0.038          | 0.377          |
| J -> PV                             |                                  |                | 0.067          |                |
| U -> PV                             |                                  |                | 0.051          |                |
| W -> PV                             |                                  |                | 0.000          |                |
| S -> PV                             |                                  |                | 0.006          |                |

**Table 6.** Model Explanatory Power and Predictive Relevance

Note: BA = Beliefs in Ability to Complete, J = Joyfulness, U = Usefulness, W = Worthiness, S = Stress, PV = Perceived Value of Doctoral Education.

The full structural model is presented in Figure 2.



**Figure 2.** Full Structural Model

Note: BA = Beliefs in Ability to Complete, J = Joyfulness, U = Usefulness, W = Worthiness, S = Stress, PV = Perceived Value of Doctoral Education.

## Qualitative Data Analysis

The qualitative analysis is analysed to deepen the understanding of the participants' perceptions (Creswell, 2014). In this study, a thematic approach by Braun and Clarke (2006)



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was utilized to develop themes and sub-themes. Based on the data analysis from 10 interviews, the results confirmed 5 themes and 15 sub-themes as below.

## **Theme 1: Beliefs in Ability to Complete**

This theme reflects master's degree students' perceptions of their confidence and capability to succeed in the doctoral program. This theme includes two sub-themes, including perceived ability to overcome obstacles, and self-confidence in academic ability.

### **Sub-theme 1: Perceived Ability to Overcome Obstacles**

This sub-theme focuses on managing some challenges in doctoral study and persisting through difficulty faced during doctoral program. The interviewed participants show their commitments and efforts to overcome challenges in completing doctoral program in terms of academic requirements, resources, and time.

*“Commitment to continuous learning, disciplined research, and effective time management is necessary to successfully graduate it. I have the confidence and motivation to overcome the challenges that I am facing; even though, PhD program is demanding.” P1.*

*“Doctoral studies are indeed challenging and require a high level of commitment from all students, both in terms of study resources, time, and research.” P4.*

### **Sub-theme 2: Self-confidence in Academic Ability**

This sub-theme highlights the importance of self-confidence in achieving academic performance. Particularly, master's degree students must have their beliefs in personal competencies, express their abilities to complete, and have confidence in succeeding doctoral program. Most participants expressed their beliefs, abilities, and confidence in succeeding doctoral programs.

*“I have great confidence in my ability to complete my PhD.” P2.*

*“I have faith in my ability to successfully complete my PhD.” P3.*

Theme 1 indicates that master's students believe they can successfully complete doctoral studies, demonstrating confidence, resilience, and commitment to overcoming challenges, which motivates sustained engagement in doctoral programs.



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## Theme 2: Joyfulness

Joyfulness refers to the positive emotional satisfaction, pleasure, and pride that master's degree students experience during doctoral studies. This theme has four sub-themes, including emotional fluctuations in doctoral study, enjoyment in the learning process, positive emotional rewards, and supportive conditions that enhance joy.

### Sub-theme 1: Emotional Fluctuations in Doctoral Study

This sub-theme focuses on the mixed feelings or emotions that occurred during doctoral studies. Some master's degree students think that they experience both joy and struggle for doctoral programs.

*"I expect that studying at the doctoral level will be more tough than enjoyable." P1.*

*"I think that if I were to pursue a PhD, perhaps my enjoyment during my studies might decrease due to work pressure and time spent on studying and research." P7.*

### Sub-theme 2: Enjoyment in the Learning Process

The sub-theme of enjoyment in the learning process reflects the feelings of enjoyment and pride gained from studying in a doctoral program. Most participants express their enjoyment and gain pride from engaging in the doctoral programs.

*"I really enjoy my PhD because it allows me to research topics that I am deeply interested in... make the process a fun and fulfilling experience." P2.*

*"I am enthusiastic about my research topic and feel a sense of satisfaction from discovering new knowledge." P6.*

### Sub-theme 3: Positive Emotional Rewards

The positive emotional rewards refer to the feeling proud of doctoral status. Master's degree students are joyful with their intellectual growth. The interviews participants feel happy and proud of themselves when they feel they have the opportunity for doctoral studies.

*"When studying my PhD, I felt happy and proud of myself for having the opportunity to study for a PhD." P3.*



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## Sub-theme 4: Supportive Conditions That Enhance Joy

The sub-theme of supportive conditions that enhance joy focuses on the motivation gained from previous academic experiences, and emotional encouragement from self or other people. The students with good academic experiences and more support and encouragement from their relatives and friends are likely to be joyful with their educational journey. The participants feel happy and motivated to overcome the challenges of completing doctoral studies when they get support and encouragement.

*“I have the confidence and motivation to overcome the challenges that I am facing.” P1.*

*“I believe that with support and hard work, I will successfully complete it.” P2.*

This theme highlights positive emotions among master’s students, including enjoyment of learning, intellectual growth, and pride in pursuing doctoral study, showing that despite challenges, the doctoral journey is experienced as motivating, rewarding, and emotionally enriching.

## Theme 3: Usefulness

The theme of usefulness focuses on the perception of master’s degree students on the practical value of doctoral education, including career advancement, knowledge and skills development, and the meaningful benefits of earning a doctoral degree. This theme has three sub-themes, including career and professional development, perceived practical value of a doctoral degree, and personal growth and knowledge gain.

### Sub-theme 1: Career and Professional Advancement

The sub-theme of career and professional advancement refers to job opportunities, and career goals achievement through the completion of a doctoral degree. Most participants agree that the completion and achievement of doctoral education is particularly important for their personal development, job, and careers opportunities at the institutional and social levels.

*“Studying for a PhD is particularly important for my personal and professional goals.” P2.*

*“A doctorate is of utmost importance for achieving personal and professional goals.” P6.*



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## Sub-theme 2: Perceived Practical Value of a Doctoral Degree

The sub-theme of perceived practical value of a doctoral degree concentrates on the importance of having a doctoral degree and its role as a tool for future innovation and development. Most participants see the importance of getting a doctoral degree, which allows them to reach their goals, innovation, and personal and societal development.

*“Of course, studying for a doctorate enables us to achieve our goals or careers, boost work efficiency, and share our personal ideas with society through education.” P10. “Studying for a PhD is very important for my personal and professional goals... and contributes to Cambodian society through new knowledge.” P2.*

## Sub-theme 3: Personal Growth and Knowledge Gain

This sub-theme focuses on the results of studying a doctorate by gaining skills and knowledge, leading to intellectual development. Most participants have a positive view on gaining knowledge and personal growth opportunities.

*“Studying for a doctorate can give me the opportunity to develop my thinking.” P3.*

*“I believe that all students will gain additional knowledge and practical skills that will make them more capable in both leadership at work and in their own businesses.” P4.*

The theme of usefulness shows that master’s degree students view doctoral studies as their pathway to achieving their professional goals, advancing their careers, and gaining more opportunities for their personal growth, which includes the benefits to themselves of developing more sophisticated abilities, expanded knowledge, and improved cognitive. It also reflects the belief regarding the broader importance of doctoral education for innovation, development, and societal contribution.

## Theme 4: Worthiness

This theme concentrates on the perception of master’s degree students on their feelings of being valued, respected, or recognized because of doctoral study, along with awareness of how society perceives the value of getting doctoral degree. This theme has three sub-themes, including



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ambivalence toward value of doctoral education, moral and personal value, and social recognition and respect.

## **Sub-theme 1: Ambivalence Toward Value of Doctoral Education**

The sub-theme of ambivalence toward value of doctoral education focuses on the feeling that doctoral education is not always valued and sometimes, its value is not recognized by some people. A participant expresses his own thoughts that there is no reason to continue doctoral education because of no encouragement and unrecognition of doctoral value by some people.

*“I sometimes wonder why I need to study for a PhD because I do not see many people encouraging me or talking about it. A PhD is a degree full of pressure and high responsibility. Nowadays, PhDs are made fun of, etc., and it has almost become a disease.” P5.*

## **Sub-theme 2: Moral and Personal Value**

This sub-theme refers to the value gained from getting doctoral degree, which is seen as morally acceptable or respectable in the institution and society. However, this worthiness is also connected to personal characteristics. Particularly, the value and respect of a doctoral degree holders depend on their character.

*“In this regard, the value and respect of a doctoral degree depend on the character of everyone (we value others, they value us, we respect others, they respect us).” P4.*

*“If I had a PhD. I prepare myself and behave well, I will get respect.” P5.*

## **Sub-theme 3: Social Recognition and Respect**

The sub-theme of social recognition and respect refers to the value being praised as knowledgeable, recognized in society and workplace. Most interviewed participants recognize the value of social recognition, respect, and capabilities with more opportunities given through doctoral studies.

*“The value of the degree is high. A doctorate provides social and institutional respect.” P2.*

*“A doctorate provides a great deal of value, including respect (meaning you will be respected and honoured by your colleagues, family, and society).” P6.*



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The theme of worthiness shows that master's students associate doctoral education with respect, recognition, and personal legitimacy, while also acknowledging mixed societal appreciation, reflecting ambivalence in how doctoral degrees are valued.

## Theme 5: Stress

Stress refers to the range of stressful experiences during the process of doctoral studies. It can include both negative pressure and motivating, performance-enhancing stress. This theme has three sub-themes, including impact of stress on academic progress, negative stress experiences, and positive stress.

### Sub-theme 1: Impact of Stress on Academic Progress

This sub-theme emphasizes the effects of stress on concentration, performance, or progress, and worry about the ability to complete doctoral programs. Based on the interviews, to achieve doctoral studies, reducing stress's effects on academic progress, maintaining, and balancing mental health, and managing their emotions are necessary.

*"To reduce it, I will manage my time, seek support, and maintain my mental health." P2.*

*"However, negative stress, such as fear or excessive worry about results, can affect academic performance and mental health." P8.*

### Sub-theme 2: Negative Stress Experiences

This sub-theme focuses on master's degree students feeling nervous about doctoral assignment or research, fear of not meeting academic requirements and expectations, work overload, and lack of resources, and personal pressure, including availability, family, financial resources.

*"Negative stress (like a lack of resources or personal pressure) can make me feel discouraged and affect academic performance." P2.*

*"A PhD is a degree full of pressure and high responsibility. Negative stress is the family factor; the factor of having children, the factor of lack of understanding about the doctorate." P5.*



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## Sub-theme 3: Positive Stress

This theme shows that stress may increase energy and motivate students to overcome the challenges of doctoral studies and enhance academic performance. Most participants notice that positive stress can encourage them to focus on doctoral studies. It may push more productivity and keep students connected to their study achievement.

*“Positive stress (like a tight schedule or competition) motivates me to focus and work harder.” P2.*

*“Positive stress can help me focus and improve my academic performance.” P8.*

The theme of stress reveals that stress experiences are associated with doctoral studies in terms of both negative and positive. Master’s degree students express negative stress regarding anxiety, fear of not meeting expectations, workload pressure, personal constraints, which may impede academic achievement and progress. However, they also see that positive stress may energize and motivate them to challenge academic tasks, such as increasing effort, enhanced focus, or improved performance. Therefore, stress plays a dual role in impeding and stimulating students’ academic performance and progress.

All themes and sub-themes are presented in Table 7.

| Name                                     | Description   | Files | References |
|--|---|-------|------------|
| Beliefs in Ability to Complete           | Master students’ confidence in their capability to succeed in the doctoral program, including their readiness, persistence, and perceived ability to manage challenges. | 9     | 27         |
| Perceived Ability to Overcome Obstacles  | • Managing challenges during doctoral study • Persistence when facing difficulties  | 3     | 7          |
| Self-Confidence in Academic Ability      | • Ability to complete PhD • Confidence in succeeding • Belief in personal competence  | 8     | 20         |
| Joyfulness                               | Positive emotions experienced during doctoral study, such as enjoyment, pride, and satisfaction, despite occasional difficulties.                                       | 9     | 18         |
| Emotional Fluctuations in Doctoral Study | • Feeling difficult (mixed feelings) • Experiencing both joy and struggle   | 2     | 2          |
| Enjoyment in the Learning Process        | • Feeling enjoyed • Gaining pride from studying in a doctoral program   | 9     | 11         |
| Positive Emotional Rewards               | • Feeling proud of doctoral status • Joy from intellectual growth   | 1     | 1          |
| Supportive Conditions That Enhance Joy   | • Motivations from previous educational experiences • Emotional encouragement from self or others   | 3     | 4          |



|  |  |    |    |
|--|--|----|----|
| Stress   | The range of stressful experiences during the doctoral journey, including both negative pressures and motivating, performance-enhancing stress.                          | 10 | 48 |
| Impact of Stress on Academic Progress          | • Stress affecting concentration, performance, or progress • Worry about completion ability due to stress  | 4  | 4  |
| Negative Stress Experiences                    | • Feeling nervous about assignments or research • Fear of not meeting lecturers' or institution's expectations • Work overload • Lack of resources or personal pressures | 10 | 38 |
| Positive Stress                                | • Stress that increases energy • Motivation derived from academic challenges • Stress as a performance enhancer  | 5  | 6  |
| Usefulness                                     | Perceived practical value of doctoral education, including career advancement, skill development, and the meaningful benefits of earning a doctoral degree.              | 10 | 45 |
| Career and Professional Advancement            | • More job opportunities • Achieving career goals  | 9  | 16 |
| Perceived Practical Value of a Doctoral Degree | • Importance of having a doctoral degree • Degree as a tool for future innovation and development  | 7  | 14 |
| Personal Growth and Knowledge Gain             | • Gaining skills and knowledge • Intellectual development  | 8  | 15 |
| Worthiness                                     | Feelings of being valued, respected, or recognized because of doctoral study, along with awareness of how society perceives the doctorate.                               | 10 | 29 |
| Ambivalence Toward Value of Doctoral Education | • Feeling that doctoral education is not always valued • Perception that some people do not recognize its worth  | 1  | 2  |
| Moral and Personal Value                       | • Being seen as morally acceptable or respectable • Worthiness connected to personal character   | 2  | 2  |
| Social Recognition and Respect                 | • Being praised as knowledgeable • Gaining respect in society • Recognition in workplace or institution  | 8  | 25 |

*Table 7. Themes and Sub-themes*

The results of qualitative data analysis reveal that these themes illustrate a multifaceted perception of doctoral studies that encompasses capabilities, emotional complexity, personal and professional value, careers opportunities, self-development, and the dual nature of stress associated with doctoral studies.

## Discussion

This study examined Cambodian master's students' perceptions of doctoral education value and the influence of beliefs in ability, joyfulness, usefulness, worthiness, and stress. Findings indicated that students' perceived value was primarily shaped by personal capability, positive emotions, and practical relevance.



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Beliefs in ability significantly predicted perceived value. Students' confidence in overcoming challenges fostered motivation, resilience, and commitment, highlighting the key role of academic self-efficacy in evaluating doctoral benefits. Joyfulness also positively influenced perceived value, with students deriving satisfaction from intellectual growth, supportive learning environments, and personal accomplishments. These emotional experiences make the doctoral journey feel rewarding and meaningful.

Usefulness emerged as another strong predictor. Students emphasized the role of doctoral studies in advancing professional goals, developing cognitive skills, and contributing to societal progress. This underscores the importance of pragmatic and career-oriented considerations in shaping perceived doctoral value, especially in developing contexts like Cambodia.

In contrast, worthiness—students' perceptions of social respect and recognition—did not significantly influence perceived value, due to inconsistent societal appreciation. Stress similarly showed no direct effect and did not moderate other relationships, suggesting that students view stress as an inherent part of doctoral study rather than a determinant of its value. Cambodian students evaluate doctoral education through the lens of self-efficacy, emotional engagement, and practical usefulness, providing insights for institutions aiming to attract and support future doctoral candidates in emerging higher education systems.

## CONCLUSION

This study examined how beliefs in ability, joyfulness, usefulness, worthiness, and stress shape Cambodian master's students' perceptions of doctoral education value. Findings showed that perceived value was primarily influenced by students' confidence in their academic abilities, positive emotional experiences, and beliefs about the usefulness of doctoral studies for career and personal development. These factors underscore the central role of self-efficacy, emotional engagement, and practical relevance in shaping aspirations for advanced education.

In contrast, worthiness and stress did not significantly influence perceived value. While students recognize the respect and legitimacy associated with holding a doctoral degree,



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ambivalence in societal recognition may weaken its effect. Similarly, stress—experienced both positively and negatively—did not alter how students evaluate doctoral education, suggesting that it is perceived as an inherent aspect of academic life rather than a determinant of value.

The study highlights that Cambodian students' evaluations of doctoral education are driven more by personal capability, intrinsic satisfaction, and anticipated benefits than by external validation or academic pressure. These insights provide practical implications for higher education institutions aiming to attract and support prospective doctoral candidates. Future research could explore how institutional, supervisory, and cultural factors further influence perceptions of doctoral education in developing contexts.

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