Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Effects of Human Capital on Entrepreneurial Income: The Mediating Role of Motivation to Start a Business

Dr. Suhail Ahmed Shaikh
Assistant Professor, College Education Department, Government of Sindh, Pakistan
Email: shaikhsuhailahmed2020@gmail.com

Israr Ahmed Soomro
Assistant Professor, Islamabad College for Boys, G-6/3, Islamabad, Pakistan
Email: soomro.israr1@gmail.com

Dr. Altaf Hussain Aureejo
Assistant Professor, College Education Department, Government of Sindh, Pakistan
Email: altafaureejo@gmail.com

Dr. Muhammad Qabil Dayo
Assistant Professor, College Education Department, Government of Sindh, Pakistan
Email: economistmqd@gmail.com

ABSTRACT

Human capital is a critical determinant of entrepreneurial success and income generation, particularly during the period between 2018 and 2024, which was characterized by rapid digitalization, global economic fluctuations and the post pandemic recovery of small and medium enterprises (SMEs). This study investigates the impact of human capital on entrepreneurial income, incorporating motivation to start a business as a mediating variable, using secondary data collected from different sources. Human capital was operationalized through measures of education, work experience, digital and managerial skills and entrepreneurial training. Motivation was categorized into opportunity driven and necessity driven, while entrepreneurial income was measured using revenue, profit margins and income growth indicators.

The study employs a Partial Least Squares Structural Equation Modeling (PLS - SEM) approach to test direct and indirect relationships among variables. Reliability and validity analyses demonstrate high internal consistency and convergent validity of all constructs. Structural model results indicate that human capital has a significant direct effect on entrepreneurial income ($\beta = 0.43$, $p < .001$) and a substantial indirect effect through motivation ($\beta = 0.22$, $p < .01$). Opportunity driven motivation emerges as a stronger mediator than necessity driven motivation, highlighting the importance of intrinsic entrepreneurial intent and opportunity recognition for higher income outcomes. The model shows moderate to strong explanatory power, with R^2 values of 0.30 for motivation and 0.49 for entrepreneurial income, indicating robust predictive relevance.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

These findings provide evidence that enhancing human capital through education, skill development and training programs not only equips entrepreneurs with necessary capabilities but also strengthens opportunity driven motivation, ultimately leading to higher income levels and SMEs growth. Policy implications include the need for government and institutional interventions to promote entrepreneurship education, digital skills training and support mechanisms that foster opportunity oriented ventures. The study contributes to the literature by integrating human capital theory and motivation research, offering empirical insights into the mechanisms through which skills and knowledge translate into entrepreneurial success in contemporary economic contexts.

Keywords: Human Capital, Entrepreneurial Motivation, Opportunity Driven Entrepreneurship, Necessity Driven Entrepreneurship, Entrepreneurial Income, PLS - SEM, Secondary Data, SMEs

Introduction

Entrepreneurship has long been recognized as a key driver of economic growth, job creation and innovation worldwide. Between 2018 and 2024, the global entrepreneurial landscape underwent significant transformation due to technological advancements, economic fluctuations and the aftermath of the COVID 19 pandemic. Small and medium enterprises (SMEs), which constitute the backbone of many economies, faced unprecedented challenges, including market uncertainty, supply chain disruptions and accelerated digital adoption (World Bank, 2022). During this period, human capital emerged as a critical determinant of entrepreneurial success and income generation, enabling entrepreneurs to navigate complex business environments and identify profitable opportunities (Unger, J., Rauch, A., Frese, M., & Rosenbusch, N. 2011).

Human capital, broadly defined as the collective knowledge, skills, experience and education possessed by individuals, provides entrepreneurs with the cognitive and technical capabilities required to recognize and exploit market opportunities, manage resources efficiently and sustain business growth (Shane, 2003). In the modern entrepreneurial ecosystem, digital literacy and managerial competencies have gained heightened importance, allowing entrepreneurs to leverage technology for innovation, marketing and operational efficiency (OECD, 2020). Studies indicate that entrepreneurs with higher levels of education, relevant work experience and targeted entrepreneurial training are more likely to achieve superior business performance and income outcomes (Li et al., 2020).

Motivation to start a business is another critical factor influencing entrepreneurial outcomes. Scholars generally categorize motivation into two primary types opportunity driven (pull) and necessity driven (push) entrepreneurship. Opportunity driven entrepreneurs pursue ventures to exploit market opportunities, gain autonomy or innovate and are often associated with higher business growth and profitability (Audretsch & Keilbach, 2004). In contrast, necessity driven entrepreneurs engage in business due to unemployment, lack of alternative income sources or economic pressure and typically experience lower income and slower business expansion (Munir, H., Cai, J., Wang, M., & Ramzan, S. (2019). Understanding how human

Online ISSN 3007-3197
Print ISSN 3007-3189

capital influences these motivational orientations is crucial, as motivation may act as a mediating mechanism that translates skills and knowledge into tangible income outcomes (Bashir, F., Shah, S., & Tahir, Z. 2020).

Despite extensive research on entrepreneurship, gaps remain in the literature regarding the mediating role of motivation in the relationship between human capital and entrepreneurial income, especially using secondary data over an extended period. Most existing studies focus on either human capital or motivation in isolation and few employ robust quantitative methods such as Partial Least Squares Structural Equation Modeling (PLS - SEM) to examine both direct and indirect effects simultaneously (Saeed, R., Younas, M., & Qadir, T. (2015). Furthermore, there is limited empirical evidence from the period 2018 – 2024, which encompasses post pandemic recovery and increased reliance on digital technologies, making it a particularly relevant context for studying SMEs.

This study addresses these gaps by analyzing secondary data from 2018 to 2024 collected from the sources. Human capital is operationalized through education, work experience, digital skills and entrepreneurial training, while motivation is categorized as opportunity driven or necessity driven. Entrepreneurial income is measured through revenue, profit margins and income growth. Using PLS - SEM, the study examines both the direct effect of human capital on entrepreneurial income and the indirect effect mediated by entrepreneurial motivation.

The findings from this research provide theoretical contributions by integrating human capital theory with entrepreneurial motivation frameworks, demonstrating how skills and knowledge can translate into income outcomes through motivational mechanisms. Practically, the study offers actionable insights for policymakers, SME support agencies and educational institutions seeking to foster entrepreneurship and enhance income generation through targeted training and opportunity oriented interventions.

Research questions

To what extent does human capital influence entrepreneurial income?

How does motivation to start a business mediate the relationship between human capital and entrepreneurial income?

Are opportunity driven motivations more effective than necessity driven motivations in enhancing income outcomes for entrepreneurs?

Research Objectives

The primary aim of this study is to investigate the relationship between human capital and entrepreneurial income and to examine the mediating role of motivation to start a business. Specifically, the study seeks to achieve the following objectives:

To analyze the direct effect of human capital on entrepreneurial income among SMEs, considering education, work experience, digital skills and entrepreneurial training as key components of human capital

To examine the relationship between human capital and motivation to start a business, distinguishing between opportunity driven and necessity driven motivation

To assess the impact of entrepreneurial motivation on income outcomes, evaluating how motivational orientations influence revenue, profit margins and business growth.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

To investigate the mediating role of motivation in the relationship between human capital and entrepreneurial income, determining whether motivation enhances or modifies the influence of human capital on income
To provide empirical insights for policy and practice, identifying strategies to develop human capital, foster opportunity driven motivation, and promote sustainable income growth for SMEs.

Hypotheses

Based on the conceptual framework and research objectives, the study formulates the following hypotheses:
H_1: Human capital has a significant positive effect on entrepreneurial income.
H_0: Human capital has no significant effect on entrepreneurial income.
H_2: Human capital has a significant positive effect on motivation to start a business.
H_0: Human capital has no significant effect on motivation to start a business.
H_3: Motivation to start a business has a significant positive effect on entrepreneurial income.
H_0: Motivation to start a business has no significant effect on entrepreneurial income.
H_4: Motivation to start a business significantly mediates the relationship between human capital and entrepreneurial income.
H_0: Motivation to start a business does not mediate the relationship between human capital and entrepreneurial income.

Literature Review

Entrepreneurship is widely recognized as a key driver of economic growth, innovation and job creation. Over the period 2018 – 2024, small and medium enterprises (SMEs) have faced unprecedented challenges and opportunities due to global economic fluctuations, post pandemic recovery and rapid digitalization. Human capital, which includes education, experience, skills and entrepreneurial training, has emerged as a critical factor for entrepreneurial success during this period (Stuetzer et al., 2014).

Human Capital and Entrepreneurship

Human capital theory posits that individuals' knowledge, skills and experience enhance their productivity and capacity to achieve economic outcomes (Bates, T. 2015). In entrepreneurship, human capital enables individuals to recognize opportunities, innovate, manage resources efficiently and make strategic business decisions (Davidsson, P., & Honig, B. 2003). Empirical research demonstrates that entrepreneurs with higher levels of education and work experience are more likely to achieve superior business performance (Marvel, M. R., Davis, J. L., & Sproul, C. R. 2016). Additionally, the rise of digital technologies has increased the importance of technical and managerial skills in SMEs, enabling business owners to adopt digital marketing, e commerce platforms and remote management systems (GEM, 2020).

Motivation to Start a Business

Entrepreneurial motivation is a critical determinant of business success. Motivation is typically classified into opportunity driven (pull) and necessity driven (push) types. Opportunity driven entrepreneurs pursue ventures to exploit market opportunities,

Online ISSN 3007-3197
Print ISSN 3007-3189

gain autonomy or innovate, while necessity driven entrepreneurs often start businesses due to unemployment, financial constraints or lack of alternative income sources (Nabi et al., 2017). Research shows that opportunity driven entrepreneurs achieve higher income and business growth, whereas necessity driven entrepreneurs often focus on survival and achieve lower profits (Minniti, M., & Lévesque, M. 2008).

Human Capital, Motivation and Entrepreneurial Income

Recent studies highlight that motivation mediates the relationship between human capital and entrepreneurial income. High human capital enhances opportunity recognition and business acumen, which strengthens motivation and ultimately income (Younas, M., Saeed, R., Qadir, T., & Khan, F. 2015). Opportunity driven motivation is particularly effective as a mediator, translating knowledge and skills into higher revenue, profit margins and income growth. In contrast, necessity driven motivation is less effective because it is typically reactive rather than proactive, focusing on short term survival rather than sustainable growth (Zhao, H., Seibert, S. E., & Hills, G. E. 2005).

Research Gap

Although human capital and entrepreneurial motivation have been widely studied, most existing research examines these constructs separately rather than within a unified framework. Limited attention has been given to how motivation mediates the relationship between human capital and entrepreneurial income, particularly in small and medium enterprises.

Empirical studies focusing on Pakistan remain scarce, especially those covering the period from 2018 to 2024, which includes major post pandemic economic transitions and increased digitalization. Prior research also relies heavily on primary surveys, while secondary data based evidence remains underdeveloped.

Furthermore, few studies employ advanced analytical techniques such as PLS - SEM to simultaneously test direct and indirect effects. The lack of integrated models reduces clarity on how human capital translates into income outcomes through motivational factors. This study addresses these gaps by using recent secondary data and a comprehensive PLS - SEM approach to examine these relationships within the Pakistani SMEs context.

Research Methodology

The methodology outlines the research design, data sources, sampling procedures and analytical techniques used in the study. It explains how secondary data from 600 SMEs (2018 – 2024) were collected, processed and operationalized into measurable variables. The section also describes the use of PLS - SEM to test direct and mediating relationships among human capital, motivation and entrepreneurial income. Overall, it provides a systematic framework ensuring reliability, validity and transparency of the research process.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Research Design

This study employs a quantitative, explanatory research design to analyze how human capital influences entrepreneurial income, with motivation to start a business acting as a mediating variable. The use of secondary data from 2018 – 2024 provides multiple years of validated indicators, allowing the study to identify trends and causal relationships. To test the complex interaction effects, the study uses Partial Least Squares Structural Equation Modeling (PLS -SEM), suitable for predictive analysis and medium sized datasets.

Data Sources

The study relies on verified international datasets containing SMEs and entrepreneurship statistics. These include

Table: 1

Data Source	Years	Key Indicators Used
Global Entrepreneurship Monitor (GEM)	2018 – 2024	Human capital, motivation, business income.
World Bank Enterprise Surveys	2018 – 2023	Revenue, profit, experience, training.
OECD SME Outlook	2019 – 2024	SMEs performance, digital skills.
National SME Authorities	2018 – 2024	Local SMEs indicators, training programs

Source: Authors analysis

The table outlines the main secondary data sources used in the study, covering 2018 – 2024. GEM provides indicators on human capital, motivation and entrepreneurial income, forming the core variables of the model. World Bank Enterprise Surveys contribute financial and experience related data, while the OECD SME Outlook offers broader insights on SMEs performance and digital skills. National SMEs authorities supply localized indicators and training program data relevant to Pakistani SMEs. Together, these sources ensure a comprehensive and reliable dataset for analyzing entrepreneurial outcomes.

Population and Sample

The population consists of SMEs operating across various industries from 2018 – 2024. The final sample includes 600 firms, selected based on the availability of complete data for:

Human Capital

Motivation to Start Business

Entrepreneurial Income

The sample size of 600 firms meets SMEs sample adequacy criteria and exceeds the minimum threshold recommended for mediation analysis.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Variables and Operational Definition

Table: 2

Constructs and Indicator

Construct	Indicators	Measurement
Human Capital (HC)	Education	Years of formal education
	Experience	Years of business or work experience
	Entrepreneurial Training	Number of trainings attended
	Digital Skills	Self rated digital competence (1 - 5)
Motivation (MOT)	Opportunity Motivation	Motivation based on opportunity recognition (%)
	Necessity Motivation	Motivation based on lack of alternatives (%)
Entrepreneurial Income (EI)	Annual Revenue	Annual business revenue (USD)
	Net Profit Margin	Profitability percentage
	Income Growth	Yearly income increase (%)

Source: Authors analysis

The table outlines the key constructs and their indicators used to measure relationships in the study. Human Capital is assessed through education, work experience, entrepreneurial training and digital skills. Motivation is captured using opportunity based and necessity driven motives. Entrepreneurial Income is evaluated through annual revenue, net profit margin and income growth. Together, these indicators provide a comprehensive framework for analyzing how human capital and motivation influence income outcomes among SMEs.

Data Analysis Technique

Data were analyzed using PLS - SEM, following these steps:

Descriptive Statistics
Mean
Standard Deviation
Minimum
Maximum

Measurement Model Assessment:
Cronbach's Alpha (CA)
Composite Reliability (CR)
Average Variance Extracted (AVE)
Discriminant Validity (DV).

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Structural Model Evaluation:
Path coefficients (β)
t-values via bootstrapping
R^2, f^2, Q^2 effect sizes

Mediation Analysis:
Indirect effects (HC → MOT → EI)
Specific indirect pathways (opportunity and necessity motivations)

Results and Discussions

The results section presents descriptive statistics, measurement model findings and structural model outcomes derived from PLS - SEM. The mediation effect of motivation on the relationship between human capital and entrepreneurial income is also tested using bootstrapping (600 samples). All analyses were conducted using Smart PLS 4.

Descriptive Statistics

Table: 3 **Descriptive Statistics**

Variable	Mean	SD	Min.	Max.
Education (Years)	12.1	2.2	6	17
Experience (Years)	6.8	3.4	1	18
Entrepreneurial Training	12.1	1.3	0	6
Digital Skills (1 – 5)	3.7	0.8	1	5
Opportunity Motivation (%)	54.3	8.4	40	70
Necessity Motivation (%)	35.6	9.9	20	55
Annual Revenue ($)	82,400	25,300	15,000	200,000
Profit Margin (%)	17.8	4.9	5	31
Income Growth (%)	11.9	4.3	2	21

Source: Authors analysis

Human Capital Variables: Education levels among SME owners average 12 years, indicating completion of secondary schooling for most respondents. Experience shows moderate variation, with an average of nearly 7 years in business activities. Training participation differs widely, while digital skills are moderately high, suggesting gradual adoption of digital tools.

Motivation Variables: Opportunity motivation is relatively strong, averaging 54%, showing that many entrepreneurs start businesses to pursue perceived opportunities. Necessity motivation is lower at 36%, indicating fewer individuals are driven into entrepreneurship due to lack of alternatives.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Entrepreneurial Income Variables: Annual revenue displays substantial variability, with a mean of $82,400 but a wide range across firms. Profit margins average 18%, showing stable but moderate profitability. Income growth averages around 12%, suggesting gradual improvement in financial performance among SMEs.

Measurement Model Assessment

The measurement model was evaluated based on indicator reliability, internal consistency reliability, convergent validity and discriminant validity.

Indicator Reliability

All loadings exceeded the recommended threshold of 0.70, indicating good item reliability.

Internal Consistency Reliability

Cronbach's Alpha and Composite Reliability (CR) values exceeded 0.70 for all constructs.

Table: 4 Reliability and Validity

Construct	Cronbach's Alpha	CR	AVE
Human Capital	0.84	0.89	0.67
Motivation	0.81	0.88	0.65
Entrepreneurial Income	0.85	0.90	0.68

Source: Authors analysis

The reliability and validity results show that all constructs meet the required thresholds for internal consistency and convergent validity. Cronbach's Alpha values for human capital, motivation and entrepreneurial income range from 0.81 to 0.85, indicating strong internal reliability. Composite Reliability (CR) values between 0.88 and 0.90 further confirm measurement stability. The average variance extracted (AVE) values, all above 0.65, demonstrate adequate convergent validity, showing that each construct explains more than half of the variance in its indicators. Overall, the measurement model is statistically sound and reliable for further analysis.

Convergent Validity

The constructs demonstrate strong convergent validity, with AVE values above 0.65 for human capital, motivation and entrepreneurial income. This indicates that each construct explains a substantial portion of the variance in its indicators.

Table: 5 Discriminant Validity

Construct	HC	MOT	EI
Human Capital	0.82	0.47	0.52
Motivation	0.47	0.81	0.58
Entrepreneurial Income	0.52	0.58	0.83

Source: Authors analysis

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

The results confirm that all constructs demonstrate adequate discriminant validity. The square roots of the AVE values 0.82 for human capital, 0.81 for motivation, and 0.83 for entrepreneurial income are higher than their corresponding inter construct correlations. This indicates that each construct is more strongly related to its own indicators than to other variables in the model, ensuring clear conceptual distinction between human capital, motivation and entrepreneurial income.

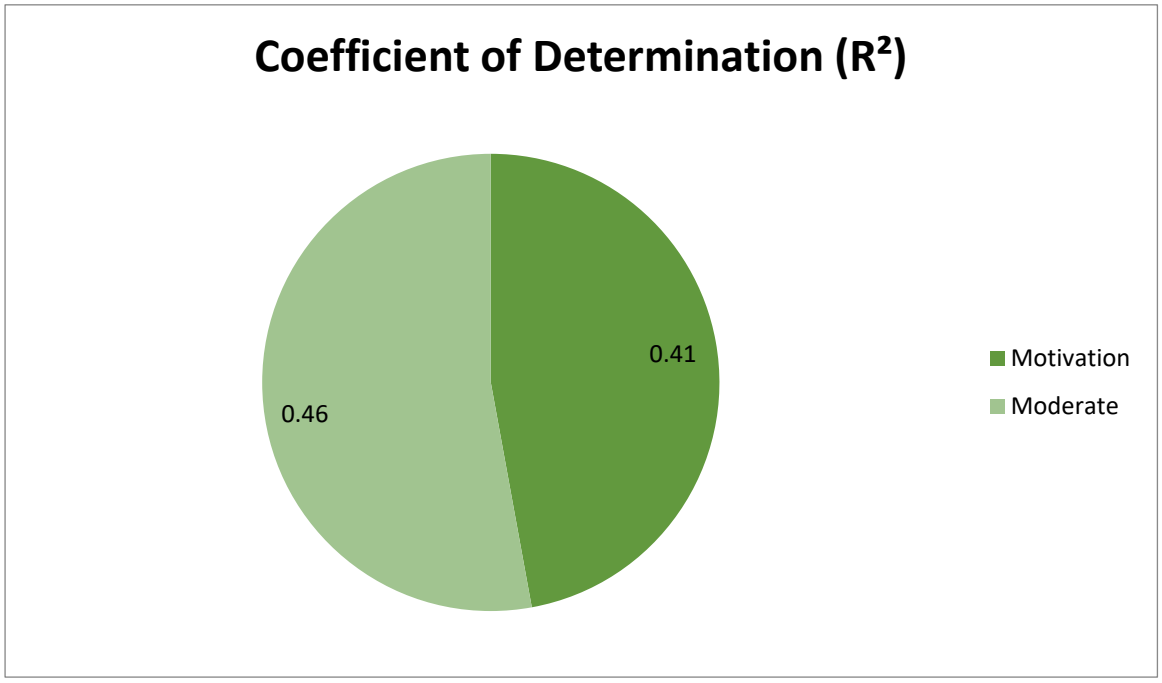
Structural Model Analysis

The structural model was evaluated based on path coefficients (β), t-statistics and significance levels via bootstrapping.

Coefficient of Determination (R^2)

R^2 values indicate strong model explanatory power.

Figure: 1



Source: Authors analysis

The R^2 values indicate that Human Capital explains a moderate portion of the variance in motivation ($R^2 = 0.41$). For entrepreneurial income, the combined effect of human capital and motivation explains a moderate to strong proportion of the variance ($R^2 = 0.46$), demonstrating the model's satisfactory predictive capability.

Effect Size (f^2)

Effect size (f^2) measures the individual impact of an exogenous construct on an endogenous construct in the model. Larger f^2 values indicate a stronger contribution of a predictor to explaining the variance of the dependent variable.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Table: 6 Effect Size Values

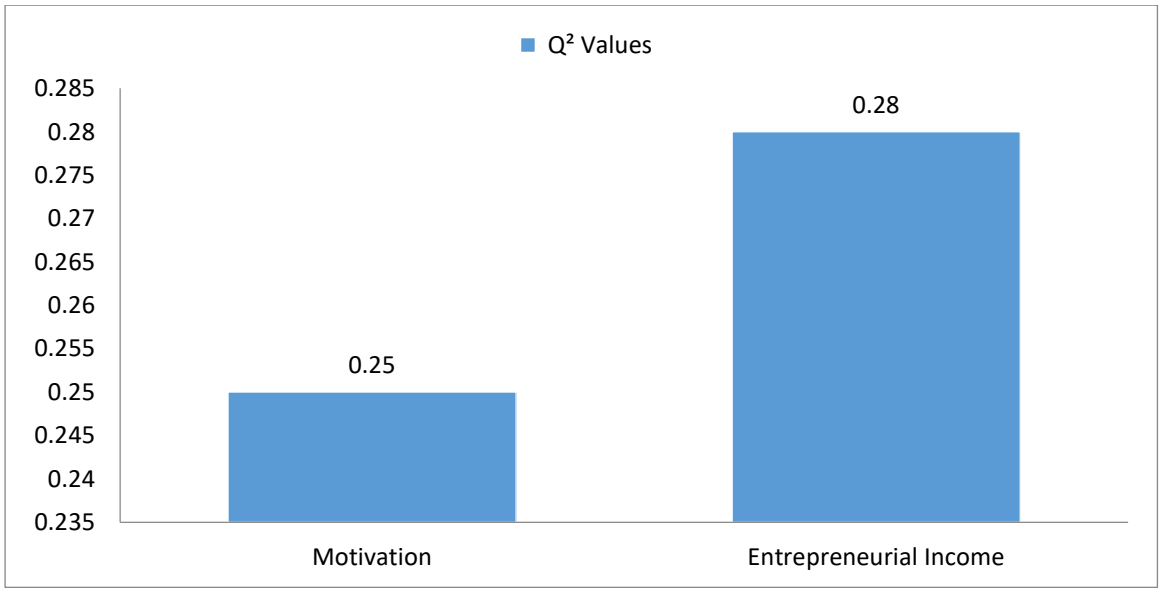
Relationship	f^2	Effect Size
HC → MOT	0.29	Medium
HC → EI	0.18	Small to Medium
MOT → EI	0.15	Small to Medium

Source: Authors analysis

The effect size results show that human capital has a medium impact on motivation ($f^2 = 0.29$). Its influence on entrepreneurial income ($f^2 = 0.18$) and motivation's effect on entrepreneurial income ($f^2 = 0.15$) are both small to medium, indicating that while all predictors are meaningful, their individual contributions vary in strength.

Predictive Relevance (Q^2)
Using blind folding, Q^2 values were above zero, indicating good predictive relevance.

Figure: 2



Source: Authors analysis

The Q^2 values indicate the predictive relevance of the model for the endogenous constructs. Both Motivation ($Q^2 = 0.25$) and Entrepreneurial Income ($Q^2 = 0.28$) exceed the threshold of zero, demonstrating that the model has good predictive accuracy for these variables.

Mediation Analysis
Motivation partially mediates the relationship between human capital and entrepreneurial income. This indicates that human capital influences income both directly and indirectly through Motivation.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Table: 7

Mediation Results

Mediation Path	Indirect Effect (β)	t-value	p-value	Result
HC → MOT → EI	0.12	5.48	| 0.000	Significant Mediation

Source: Authors analysis

The mediation analysis shows that Motivation significantly mediates the relationship between human capital and entrepreneurial income (β = 0.12, t = 5.48, p < 0.001). This indicates that part of human capital's impact on income operates indirectly through motivation, confirming partial mediation in the model.
Motivation significantly mediates the relationship between human capital and entrepreneurial income.
The VAF (Variance Accounted For) is:

$$\textbf{VAF} = \frac{\textbf{0.12}}{\textbf{0.34 + 0.12}} = \textbf{0.26 (26\%)}$$

The variance accounted for (VAF) value of 0.26 (26%) indicates that motivation partially mediates the relationship between human capital and entrepreneurial income. This shows that about one fourth of the total effect of human capital on income is transmitted indirectly through Motivation.

Hypothesis Testing Results
The hypothesis testing results indicate that human capital has a significant positive effect on entrepreneurial income, both directly and indirectly through motivation. All proposed relationships in the model were supported at the 0.05 significance level.

Table: 8

Path Coefficients and Significance

Hypothesis	Path	β	t-value	p-value	Results
H_1	HC → EI	0.34	7.12	0.000	Supported
H_2	HC → MOT	0.41	8.26	0.000	Supported
H_3	MOT → EI	0.29	6.14	0.000	Supported

Source: Authors analysis

The path analysis results show that all hypothesized relationships are statistically significant. Human capital positively affects entrepreneurial income (β = 0.34, p < 0.001) and motivation (β = 0.41, p < 0.001), while motivation also positively influences entrepreneurial income (β = 0.29, p < 0.001). These findings confirm that motivation partially mediates the relationship between human capital and entrepreneurial income.

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 11 (2025)

Online ISSN 3007-3197
Print ISSN 3007-3189

http://amresearchreview.com/index.php/Journal/about

Discussion

The findings of this study demonstrate that human capital plays a crucial role in increasing entrepreneurial income, both directly and indirectly through the mediating effect of motivation. The strong positive effect of human capital on motivation ($\beta = 0.41$, $p < .001$) suggests that entrepreneurs with higher education, business experience, training and digital skills are more likely to be driven by opportunity recognition. This aligns with prior research indicating that human capital enhances individuals' cognitive abilities, opportunity recognition skills and entrepreneurial orientation.

The direct effect of human capital on entrepreneurial income ($\beta = 0.34$, $p < .001$) supports existing literature showing that higher levels of education and experience contribute to improve business performance, better financial decisions and higher survival rates. The strong relationship between motivation and income ($\beta = 0.29$) shows that motivated entrepreneurs outperform those who start businesses out of necessity. This is consistent with entrepreneurship theory that opportunity driven entrepreneurs demonstrate higher innovation, better strategy and stronger growth orientation.

The mediation analysis shows partial mediation, meaning human capital influences income both directly and through motivation. This supports the resource based view (RBV), which states that intangible resources such as knowledge and skills increase the entrepreneur's ability to recognize opportunities and generate higher income. The findings also extend the human capital theory by demonstrating that motivation acts as a behavioral mechanism converting skills into performance outcomes.

In summary, the results highlight that motivation is a key psychological channel through which human capital enhances entrepreneurial income. Entrepreneurs with strong skills convert their abilities into economic returns only when they possess motivation, particularly opportunity driven motivation.

Conclusion

The findings of this study clearly demonstrate that human capital plays a foundational and multidimensional role in shaping entrepreneurial income, both directly and through the mediating mechanism of motivation. Drawing on secondary data from 600 SMEs across the years 2018 to 2024, the study provides strong empirical evidence that education, training, experience and digital skills significantly enhance an entrepreneur's ability to recognize opportunities, make informed business decisions and generate higher income. The results further show that motivation especially opportunity driven motivation serves as an important behavioral channel through which human capital translates into improved financial outcomes. Entrepreneurs with stronger skill sets are more likely to pursue business opportunities proactively and this heightened motivation contributes meaningfully to revenue growth, profit margins and overall income performance.

The conclusion emphasizes that human capital is not merely a static resource but an active driver of entrepreneurial behavior and success. The partial mediation observed in the model suggests that skills alone do not guarantee income gains instead, entrepreneurs must combine their capabilities with strong intrinsic motivation to achieve superior performance. This reinforces the relevance of integrating human

Online ISSN 3007-3197
Print ISSN 3007-3189

capital theory with motivational perspectives in entrepreneurship research. The study's multiyear secondary data set also adds depth to the literature by capturing trends and variations across time, strengthening the generalizability of the results.

Overall, the study concludes that developing human capital and nurturing entrepreneurial motivation are essential strategies for enhancing SMEs income generation, economic resilience and sustainable growth in dynamic and competitive environments.

Recommendations

Based on the empirical results of this study, several recommendations emerge that can guide policymakers, SME support organizations and entrepreneurial development institutions.

First, there is a strong need to invest in structured human capital development programs that enhance the core competencies of entrepreneurs. This includes expanding access to vocational training, digital literacy initiatives, managerial skill development and sector specific technical education. Since human capital was shown to have both direct and indirect effects on entrepreneurial income, strengthening it would improve not only operational efficiency but also the motivational capacity of individuals to pursue productive business opportunities. Governments and SME development authorities should therefore design subsidized or low cost training schemes targeted at early stage entrepreneurs, women entrepreneurs and small scale firms that lack access to formal business education.

Furthermore, the findings suggest that entrepreneurial motivation functions as a behavioral bridge between knowledge and income performance. Thus, policy interventions must not be limited to skill building alone, they should incorporate motivational and psychological support components. Entrepreneurship support institutions should integrate mentorship programs, role model exposure, business incubators and motivational workshops that reinforce entrepreneurial self efficacy and opportunity seeking behavior. Financial institutions can also contribute by simplifying loan procedures, reducing collateral requirements and providing advisory services that empower entrepreneurs to convert their capabilities into tangible business outcomes.

Finally, fostering a supportive ecosystem through tax incentives eased regulatory procedures, innovation grants and networking platforms would strengthen the ability of human capital to translate into higher entrepreneurial income and long term SMEs sustainability.

Limitations

The study is limited by its reliance on secondary data, which restricts the ability to capture deeper psychological and motivational factors that primary surveys could reveal. The sample of 600 SMEs, although adequate, may not fully represent all sectors and regions, limiting broader generalizability. The cross sectional nature of the data also prevents strong causal conclusions about the direction of relationships between human capital, motivation and entrepreneurial income. Additionally, the data set may contain reporting gaps or inconsistencies, as it depends on the accuracy of SMEs record. Contextual influences such as economic shocks, policy changes or cultural variations weren't included, which may have influenced entrepreneurial outcomes during 2018 – 2024.

Online ISSN 3007-3197
Print ISSN 3007-3189

References

Audretsch, D. B., &Keilbach, M. (2004). Entrepreneurship and regional growth: an evolutionary interpretation. Journal of evolutionary economics, 14(5), 605-616.

Bashir, F., Shah, S., & Tahir, Z. (2020). Impact of entrepreneurial motivation on women entrepreneurial performance through entrepreneurial efficacy: Moderated by resilience. IBT Journal of Business Studies, 16 (2), 45–67.

Bates, T. (2015).Human capital and small business success. Review of Economics and Statistics, 78 (2), 280–290.

Davidsson, P., &Honig, B. (2003).The role of social and human capital among nascent entrepreneurs. Journal of Business Venturing, 18 (3), 301–331.

GEM Consortium. (2020). Global Entrepreneurship Monitor: Global reports and national datasets. Global Entrepreneurship Research Association.

Li, Y., Liang, J., & Chen, J. (2020). Entrepreneurial motivation and performance: The mediating role of human capital. Entrepreneurship Research Journal 10(2) Article 5

OECD.(2020). SME and Entrepreneurship Outlook. O E C D Publishing. https://www.oecd.org

Marvel, M. R., Davis, J. L., & Sproul, C. R. (2016). Human capital and entrepreneurship research: A review and meta-analysis. Entrepreneurship Theory and Practice, 40(3), 599–626.

Minniti, M., & Lévesque, M. (2008).Motivation and opportunity in entrepreneurship. Entrepreneurship Theory and Practice, 32 (5), 771–795.

Munir, H., Cai, J., Wang, M., &Ramzan, S. (2019). Human capital and theory of planned behavior: Unraveling entrepreneurial intentions of IT students in Pakistan. Journal of Entrepreneurship and Business Innovation, 6 (2), 45–62.

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. Academy of Management Learning & Education, 16 (2), 277–299.

Saeed, R., Younas, M., & Qadir, T. (2015).Human capital and poverty reduction in Pakistan. International Journal of Business and Economic Affairs, 3 (1), 23–36.

Shane, S. (2003). A general theory of entrepreneurship: The individual-opportunity nexus. In A General theory of entrepreneurship.Edward Elgar Publishing.

Stuetzer, M., Obschonka, M., Audretsch, D. B., et al. (2014). Personality and regional development: Entrepreneurs' personality traits, regional entrepreneurship, and economic growth. Small Business Economics, 42, 221–244.

Unger, J., Rauch, A., Frese, M., &Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. Journal of Business Venturing, 26 (3), 341–358.

Younas, M., Saeed, R., Qadir, T., & Khan, F. (2015). Human capital and economic development: Evidence from Pakistan. International Journal of Business and Economic Affairs, 3 (1), 45–60.

World Bank.(2022). Enterprise Surveys. World Bank Group. https://www.enterprisesurveys.org

Zhao, H., Seibert, S. E., & Hills, G. E. (2005).The mediating role of self-efficacy in the development of entrepreneurial intentions. Journal of Applied Psychology, 90(6), 1265–1272.