

Bridging the Gap: A Study on Mindsets, Need for Achievement, and Their Collective Impact on Cultivating Innovative Behavior

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ABSTRACT: This paper explores how individual mindsets influence innovative behavior and whether the need for achievement plays a role in that relationship. Using data collected from 350 university students, the study found that students with a growth mindset tend to show higher levels of innovative behavior. It also revealed that the need for achievement partially explains how Mindset affects innovation. While earlier research has often considered these factors separately, this study brings them together to explore how internal motivation can shape how mindsets translate into behavior. It adds to existing theories by offering a more connected view of how personal beliefs and goals influence innovation, especially in academic settings.

Keywords: growth mindset; fixed Mindset; innovative Behavior; need for achievement.

I. INTRODUCTION

The Mindset is a mental attitude, referred to by scholars as an individual's beliefs and thoughts regarding a specific topic [1]. The Mindset is believed to shape an individual's reaction to specific events and circumstances and influence their attitudes and behaviors [1, 2]. Psychologist Carol Dweck's studies on the Mindset in educational and developmental psychology suggest that some individuals might have a fixed belief regarding their intelligence and abilities. This is known as the "fixed mindset," while others believe that their abilities and intelligence can develop through effort and experiences or having a "growth mindset" [3]. Dweck's mindset theory also explains the impact of each type of Mindset on an individual's attitude toward challenges and obstacles [4]. The growth mindset specifically has triggered the interest of scholars due to the reaping benefits of having such a mindset, as well as higher levels of intrinsic motivation [5]. Innovation is important in the survival of organizations by adapting to changes and challenges, seizing opportunities, and, in turn, creating competitive advantages [6], making innovative behavior an essential asset for the success of an organization [7]. This has pushed researchers to investigate how innovation can be cultivated individually. Generating, promoting, and implementing novel ideas is known as innovative behavior [8].

Scholars identified several factors that foster innovative behaviors, including work context characteristics such as supportive leadership, workgroup or team interaction, and practical support for innovation [9]. Openness, curiosity, self-efficacy, and learning goal orientations were commonly recognized as antecedents to innovative behavior [10-11]. David McClelland's motivation theory [12] categorizes motivation into three distinct types: need for achievement (nAch), need for power (nPow), and need for affiliation (nAff). Individuals with high-achieving motivation strongly desire to succeed [13] and prefer situations where success is attained through their efforts rather than luck, moderately complex scenarios or situations, and tasks where clear feedback or knowledge can be provided on the individual's efforts [14].

Individuals with a higher need for achievement are believed to be better at identifying opportunities and investing resources toward achieving innovative performances [12]. They are often believed to be innovative

in producing novel solutions due to the sense of satisfaction attained from such situations [14]. While an interplay between a growth mindset and innovative Behavior can be explained by the intrinsic belief in the potential for development through learning and seeing obstacles and challenges as opportunities for growth, little is published on this relationship [2]. Furthermore, while previous research has explored the independent influence of a growth mindset on academic achievement and motivation, there is limited empirical work examining how a growth mindset may contribute specifically to innovative Behavior, particularly among university students. Even less is known about how internal motivation, such as the need for achievement, might help explain or mediate this relationship. Existing studies often examine mindset and motivation as separate constructs rather than as interconnected factors influencing innovation. Previous studies have found that students with a growth mindset engage in exploratory learning, risk-taking, and problem-solving, all precursors to innovation [59, 62]. In educational contexts, students with growth-oriented beliefs are more likely to persist in creative tasks and look at failure as a learning opportunity rather than a setback [61]. In organizational settings, employees with a growth mindset tend to demonstrate greater adaptability and frequently contribute to team innovation, particularly when supported by learning-oriented leadership [60]. Therefore, this study addresses this gap by examining whether the need for achievement mediates the relationship between a growth mindset and innovative Behavior. It also offers a deeper understanding of how personal beliefs and inner motivations come together to shape innovation in an academic settings.

This study investigates the psychological factors influencing innovative Behavior among university students, focusing on Mindset and achievement motivation. Drawing on Dweck's mindset theory and McClelland's theory of needs, the study explores how a growth mindset may contribute to innovative Behavior and whether the need for achievement is a mediating factor in this relationship. Therefore, the study presents the following research objectives:

- To explore the relationship between a growth mindset and innovative Behavior.
- To investigate the relationship between a growth mindset and the need for achievement.
- To explore the relationship between the need for achievement and innovative Behavior.
- To determine whether the need for achievement mediates the relationship between a growth mindset and innovative Behavior.

Based on these theoretical foundations, the study is guided by the following research questions:

- To what extent is a growth mindset associated with innovative Behavior among university students?
- Does a growth mindset positively influence students' need for achievement?
- Is there a significant relationship between the need for achievement and innovative Behavior in the context of higher education?
- Does the need for achievement mediate the relationship between a growth mindset and innovative Behavior among university students?

These research questions are designed to contribute to a deeper understanding of how personal beliefs and internal motivation interact to shape innovation-related outcomes in academic settings.

II. THEORETICAL BACKGROUND AND HYPOTHESES

1. INNOVATIVE BEHAVIOR

While innovation and creativity are often used interchangeably and synonymously [15], creativity is often considered the initial phase of innovation [16, 15], which revolves around the generation of novel ideas [16]. Innovation, or innovative Behavior, on the other hand, differs from creativity based on advocating for and implementing ideas [17, 18]. In light of that, innovative behavior is considered a multistage process [18] that individuals go through intentionally to identify problems, generate ideas and solutions to mitigate problems and promote and attempt to execute those solutions, which is known as innovative behavior [8]. Throughout the literature, several factors were identified as antecedents to innovative Behavior, mainly contextual factors [19], such as work and team climate and characteristics, and individual factors, such as self-confidence, originality, and motivation [20].

Interest in studying innovative Behavior is due to the benefits that were found as a result of such behaviors.[21] In developing countries and on the national level, innovation can lead to economic growth, poverty reduction, and improved quality of life [22]. On an organizational level, innovative behaviors were found to be a driving force for the organization's innovation and a contributor to the overall organizational productivity and maintenance of an organization's competitive advance [23]. Therefore, innovative behaviors are crucial for organizations to survive long-term and adapt to changing industry demands and trends. Previous research suggests that innovative Behavior is not necessarily inherited but can also be cultivated and developed [23]. In turn, recognizing and investigating what individual factors must be nurtured to develop innovative Behavior is crucial.

2. THE MINDSET THEORY

The Mindset refers to individuals' assumptions and beliefs regarding their traits and characteristics. The mindsets are categorized into fixed and growth mindsets, as proposed by [24]. As suggested by the name, individuals with a fixed mindset believe that their capabilities cannot be controlled or improved regardless of their efforts or experiences. On the other hand, individuals with a growth mindset were found to believe that their capabilities, such as talents and intelligence, are malleable and changeable and can be nurtured and improved through efforts and experiences [3, 24].

Individuals with growth mindsets were found to have higher levels of motivation, were more resilient, exerted more effort when faced with challenges [26], and had fewer psychosocial problems such as anxiety [26]. Moreover, having a growth mindset was linked to higher levels of work engagement [27] and lower levels of work stress [28], beneficial to organizations and the individual. Those benefits and perks explain the growing interest in investigating and nurturing growth mindsets in recent years and literature. Individuals holding a growth mindset were commonly found to set learning goals, such as learning or mastering a new skill or task, and engage in acts intended to improve performance, such as exerting more effort and seeking feedback regularly [29]. In addition to that, when faced with challenges and setbacks, they embrace and view those challenges as a means to learn and develop new ideas [30]. Furthermore, [31] states several positive outcomes as a result of having a growth mindset, such as the ability to bounce back from failures, better performances in demanding school and business tasks, and better handling of relationship conflict [31].

3. GROWTH MINDSET AND INNOVATIVE BEHAVIOR

As stated by [32], learning goals often lead to innovative Behavior.[2] state that the positive traits of holding a growth mindset impact innovation and innovative behaviors; moreover, [33] suggest that growth mindsets are positively related to innovation in all fields. Accordingly, the link between the two constructs, innovative Behavior, and the growth mindset, can be explained and expected due to the common traits such as seeking challenging and moderately risky tasks and accepting new experiences, in addition to flexibility in thinking.

Further, Individuals holding a growth mindset are believed to be constantly seeking opportunities to self-develop and improve and are generally open to learning [5], which ties in with the previous finding in the literature that implies that individuals with innovative behaviors are often dissatisfied with the status quo [34]. However, while personal factors were found to be contributors to developing innovative behaviors and despite the common traits shared by the two constructs, the direct relationship between having a growth mindset and innovative Behavior has not been extensively discussed in the literature. Therefore, this research paper hypothesizes the following:

- H1: A significant relationship exists between the growth mindset and innovative Behavior.

4. NEED FOR ACHIEVEMENT

In the entrepreneurship literature, several personal factors are believed to be recurring among entrepreneurs, such as the likelihood to innovate, risk-taking tendencies [35], and the need for achievement [35, 36].

The need for achievement is the unconscious motive that would push individuals to perform well and enhance their earlier performances, in addition to performing better than others [12, 35], as initially introduced by [37] the need to achieve as one of the 44 variables that make up a personality. The construct was later polished, and [12] proposed the Need for Achievement as one of the three primary needs for an individual and, in turn, implied to be a driving factor for entrepreneurial behaviors [12]. While one personality trait may not be enough to understand and investigate the tendency to develop entrepreneurial intentions, The need for achievement stands out in literature as a recurring predictor of entrepreneurial activities [35]. Individuals with a higher need for achievement pursue tasks requiring skill and effort and are often up to moderate challenges and risks [12]. Overcoming challenging tasks or obstacles is used to demonstrate skills and abilities [38]. Moreover, they often seek clear feedback to gain insight into improving past performances [12].

5. GROWTH MINDSETS AND NEED FOR ACHIEVEMENT

The link between individuals with learning goal orientation and higher needs for achievement was previously discussed in the literature. Initially, [39] stated that individuals who believe their traits are malleable and hold a learning or mastery goal orientation are expected to value achievements more than others. Individuals with learning goals, similar to those with a growth mindset, are believed to demonstrate more effort-based tactics in response to failure and better achievement [26]. An experimental study by [26] found that developing a more malleable mindset enhanced the students' motivation. Additionally, in another study by [40], having a growth mindset was also found to partially mediate achievement motivation. Based on that, this research paper hypothesizes.

- H2: There is a relationship between the growth mindset and the need for achievement.

6. NEED FOR ACHIEVEMENT AND INNOVATIVE BEHAVIOR

In literature, the need for achievement was found to be correlated with innovative Behavior [41, 42] in a meta-analysis investigating the link between achievement motivation and entrepreneurial activity, which stated that individuals with a high need for achievement were more likely to be drawn to innovative activities [42]. In line with the previously mentioned findings, a meta-analysis by [43] found a significant connection between the need for achievement and entrepreneurship. As proposed by [44], more motivation is needed for individuals to pursue entrepreneurial activities. Therefore, achievement motivation is often considered a driving factor for becoming an entrepreneur [45]. Following that, this research paper aims to hypothesize the following.

- H3: There is a relationship between the need for achievement and innovative Behavior.

7. THE MEDIATING EFFECT OF THE NEED FOR ACHIEVEMENT

A study by [46] not only found a positive connection between intrinsic motivation and innovative Behavior but also stated that intrinsic motivation can play a significant mediating role in developing such behaviors. This was also corroborated by [47], who found achievement motivation to have a noticeable mediating effect in addition to influencing innovative behaviors. Therefore, based on the previous findings in the literature, this research paper aims to investigate the following hypothesis:

- H4: The relationship between a growth mindset and innovative Behavior is mediated by the need for achievement.

The theoretical framework presented in Figure 1 is derived from the preceding discussion and the hypotheses explored in this study. This research extends prior work by examining the relationship between a growth mindset and innovative Behavior while introducing the need for achievement as a mediating variable, as illustrated in Figure 1.

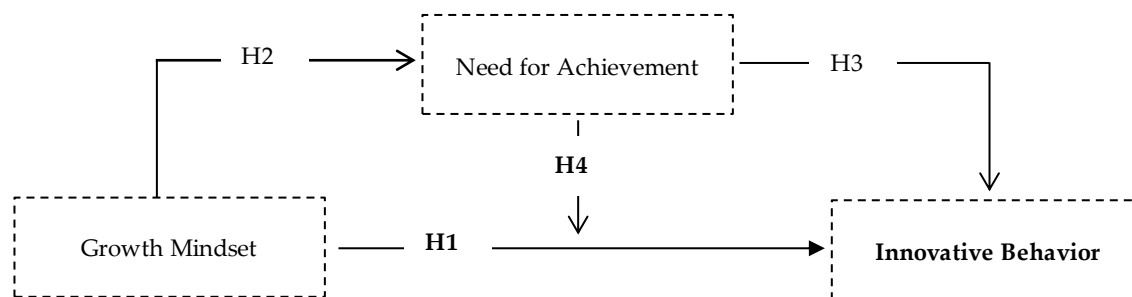


FIGURE 1. Theoretical framework.

III. METHODOLOGY

1. POPULATION AND SAMPLE OF THE STUDY

This study follows the quantitative approach; Participants were selected using a convenience sampling method, relying on students at Jordanian University who were readily accessible and willing to participate during the data collection period. This approach was chosen due to practical considerations such as time constraints, ease of access, and limited resources.

2. MEASUREMENT

A questionnaire consisting of 19 items was designed for this study and consisted of two sections; one section covered the participants' demographics, such as gender, age, and educational background. The items in the second section were adapted from previous studies to measure the independent variables (the mindsets), the dependent variable (innovative Behavior), and the mediating variable (nAch). All constructs in the second section of the questionnaire were measured on a 1-5 Likert scale and can be found in Table 1.

Table 1. Construct measures.

Variable	# of Items	Source
The Mindset	8	[48]
Need for Achievement	5	[49]
Innovative Behavior	6	[8]

IV. RESULTS AND DISCUSSIONS

The descriptive statistics of the study, including participant demographics such as frequency and percentages, are available in Table 2.

Table 2. Descriptive statistics.

		Frequency	Percent	Cumulative
Gender	Female	157	44.9	44.9
	Male	193	55.1	100
Age	18-24	326	93.1	93.1
	25-34	22	6.3	99.4
	35-44	2	.6	100
	45-54	0	0	100
Highschool	Scientific	244	69.7	69.9

stream	Stream Literary Stream	97	27.7	97.4
	Other Stream	9	2.6	100
Highschool Equivalency	National	186	53.1	53.3
	International (IB, GCSE, SAT)	164	46.9	100
Family own Business	Yes	165	47.1	47.1
	No	185	52.9	100
Living location	Amman	314	89.7	89.7
	Outside Amman	36	10.3	100

1. MEASUREMENT MODEL (CONSTRUCT RELIABILITY AND VALIDITY)

Construct Reliability was assessed using Cronbach's Alpha and Composite Reliability. Cronbach's Alpha for each construct in the study was found to be over the required limit of .70 [50]. Composite reliability ranged from .798 to .845, above the .70 benchmark [51]. Hence, Construct reliability was established for each construct in the study, as shown in Table 3. The convergent validity of scale items was estimated using the Average Variance Extracted [52]. All constructs' average variance-extracted values were above the threshold value of .50 [52]. Therefore, the scale used for the present study has the required convergent validity, as shown in Table 3

Table 3. Construct reliability and validity.

Construct	Item	Loadings	CR	Cronbach's Alpha	AVE	MaxR(h)
Growth Mindset	GM1	.689	0.808	0.807	0.513	0.810
	GM2	.753				
	GM3	.686				
	GM4	.735				
Fixed Mindset	FM1	.780	0.845	0.841	0.579	0.859
	FM2	.841				
	FM3	.764				
	FM4	.645				
nAch	nAch1	.789	0.798	0.776	0.501	0.810
	nAch2	.788				
	nAch3	.615				
	nAch4	Deleted				
	nAch5	.616				
Innovative Behavior	IB1	.730	0.833	0.830	0.503	0.852
	IB2	.834				
	IB3	.634				
	IB4	Deleted				
	IB5	.605				
	IB^	.720				

2. DISCRIMINANT VALIDITY

Discriminate validity in the study was assessed using the Fornell and Larcker criterion and the Heterotrait Monotrait (HTMT) ratio. According to Fornell and Larcker's criteria, discriminate validity is established

when the square root of AVE for a construct is more significant than its correlation with the other construct in the study, as shown in Table 4. However, Fornell and Larcker's criterion has recently been criticized, and a new method to assess the Discriminate validity of the HTMT ratio is increasingly utilized. In the present study, discriminate validity is not entirely established using the Fornell and Larcker criterion; However, when assessed using the HTMT ratio, all ratios were less than the required limit of .85 [53]. Hence, Discriminate validity was established.

Table 4. Discriminant validity analysis.

	GM	FM	nAch	InB
GM	.0716			
FM	-0.556***	0.761		
nAch	0.475***	-0.161*	0.708	
InB	-0.531***	-0.281***	0.468***	0.709

Significance of Correlations: *** $p < 0.001$ * $p < 0.05$

Table 4. HTMT Discriminant validity analysis.

	GM	FM	nAch	IB
GM	—			
FM	0.575	-		
nAch	0.502	0.164	-	
InB	0.510	0.284	0.482	-

As shown in Table 5, All VIF values are clearly below the threshold of 5. Collinearity among predictor constructs is likely not critical in the structural model.

Table 5. Collinearity test.

Dependent Variable	Independent Variable	VIF
InB	GM	1.1496
	FM	1.295
	nAch	1.181
nAch	GM	1.290
	FM	1.290

3. MEASUREMENT MODEL

Confirmatory analyses (CFA) were computed using the Analysis of Amount Structure (AMOS) 26 to test the measurement model. As part of confirmatory factor analysis, factor loadings were assessed for each item; two items were removed (nAch4 and IB4) due to low factor loading ($< .05$). The model fit measures were used to assess the model's overall goodness of fit (CMIN/df, GFI, CFI, TLI, SRMR, and RMSEA), and all values were within their respective ordinary acceptance level [54-56] The four-factor model yielded a good fit in Table 6 for the data: CMIN/df=1.622, GFI= .943, TLI= .963, SRMR=.048, and RMSEA= .044

Table 6. Measurement model.

Fit Indices	Recommended Value	Source(s)	Obtained Value
P	insignificant	[57]	.000
CMIN/df	3-5	<2 [54] to 5 [58]>	1.622
GFI	>.90	[51]	.943
CFI	>.90	[56]	.969
TLI	>.90	[56]	.963

SRMR	<.08	[55]	.048
RMSEA	<.08	[55]	.044

4. HYPOTHESIS TESTING

There is a statistically significant positive effect of a growth mindset (GM) on the need for achievement (nAch), with a beta coefficient of 0.421 (SE = 0.056, t (degrees of freedom) = 7.455, $p < 0.001$) supporting H1. Also, there is a statistically significant positive effect of the need for achievement (nAch) on innovative Behavior (InB), as indicated by a beta coefficient of 0.257 (SE = 0.048, t (degrees of freedom) = 5.045, $p < 0.001$) supporting H2. In addition, A growth mindset (GM) has a statistically significant positive effect on innovative Behavior (InB), with a beta coefficient of 0.286 (SE = 0.058, t (degrees of freedom) = 4.940, $p < 0.001$) supporting H3. Furthermore, there is a statistically significant negative relationship between a growth mindset (GM) and a fixed mindset (FM), as evidenced by a beta coefficient of -0.332 (SE = 0.041, t (degrees of freedom) = -8.004, $p < 0.001$) supporting H4.

Table 7. Hypothesis testing.

Hypothesized direct relationship	Path	Beta	SE	t-value	p-value	Decision
H1	GM->nAch	.421	.056	7.455	0.001***	Accepted
H2	nAch->InB	.257	.048	5.045	0.001	Accepted
H3	GM->InB	.286	.058	4.940	0.001	Accepted
H4	GM<->FM	-.332	.041	-8.004	0.001	Accepted
Control Variable	1:FM->nAch	.053	.048	1.109	.267	-
	2:FM->IB	-.058	.045	-1.267	.205	-

5. CONTROL VARIABLE

To control for the influence of individuals' mindsets, we included Fixed Mindset as a control variable [3]. The Effect of Fixed Mindset (FM) on Need for Achievement (nAch). The relationship between a fixed mindset (FM) and the need for achievement (nAch) was not found to be statistically significant (beta = 0.053, SE = 0.048, t (degrees of freedom) = 1.109, $p = 0.267$).

The Effect of Fixed Mindset (FM) on Innovative Behavior (IB). The relationship between a fixed mindset (FM) and innovative Behavior (IB) was not statistically significant (beta = -0.058, SE = 0.045, t (degrees of freedom) = -1.267, $p = 0.205$).

6. MEDIATION ANALYSIS

The study assessed the mediation role of nAch on the relationship between GM and FM on IB. The result revealed a significant indirect effect of GM through nAch on IB ($b = .169$, $P = .000$, $t = 9.003$), supporting H5 in addition to a significant indirect effect of FM through nAch on IB ($b = .036$, $P = .001$, $t =$), supporting H6. Correspondingly, the direct effect of GM on IB in the presence of mediators was found significant ($b = .412$, $P = .001$, $t =$). In addition, the direct effect of FM on IB in the presence of mediators was found insignificant ($b = .019$, $P = .770$, $t =$) Hence, there is a partial mediation of nAch between GM and IB. and indirect mediation only of nAch between FM and IB the summary is presented in Table 8

Table 8. Mediation summary.

Hypothesized relationship	Direct Effect	Indirect Effect	Confidence Interval		P-Value	Conclusion
			Lower Bound	Upper Bound		
H5	0.412 (.001)	0.169	0.093	0.302	0.000	Partial Mediation

H6	-0.019 (.770)	0.036	0.009	0.093	0.030	Indirect- only Mediation
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V. CONCLUSIONS

To conclude, our study is intended to investigate the relationship between a growth mindset and innovative Behavior on an individual level and the effect of the need for achievement on this relationship. Our study also established the importance of a growth mindset in enchaining the innovative Behavior of students; this study has narrowed the gaps in the literature and contributed to a better understanding of the roles and relationships between the growth mindset, the need for achievement and innovative Behavior, which were underpinned by previous empirical research and motivation theories. The study's results found a significant impact of the growth mindset on an individual's innovative Behavior in addition to that partial mediation of the need for achievement in that relationship.

1. PRACTICAL IMPLICATIONS

The research findings provide useful lessons for educators, managers, and policymakers. Since a growth mindset encourages innovative Behavior, there's value in creating learning environments that support this way of thinking through teaching practices that reward effort, resilience, and curiosity; encouraging a growth mindset in educational settings can help students become more open to new ideas and more willing to take creative risks. Simple shifts, like focusing on progress rather than perfection or allowing space for trial and error, can make a real difference. Regarding the workplace, managers should consider how motivation and Mindset influence innovation. This can help create an environment where employees feel supported to try new things and recognized for their efforts, not just results, to foster more innovative thinking. In addition, for policymakers, the results suggest it is worth looking beyond traditional skills training to support the development of personal qualities like motivation and resilience.

2. FUTURE RESEARCH

Future research could benefit from using longitudinal studies, which can track how these variables change and influence one another over a more extended period. This would help us see whether a growth mindset leads to more incredible innovation through changes in motivation. In addition, future studies can explore these relationships in different settings or cultures and consider other factors, like leadership style or workplace environment, that might shape the outcomes.

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