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Contents

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The Impact of Workaholism on Employees' Wellbeing: An Investigation in a Non-Western Economy

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Abstract: *Amid the aftermath of the 'Great Resignation' following COVID-19, employees increasingly demand improved work-life balance due to the challenges posed by modern workplaces. This study first examines the impact of workaholism on work-family inter-role conflicts. Second, it explores how work-family inter-role conflicts affect the physical and psychological health of workaholics. Third, the study assesses the impact of ill health on workaholics' job and life satisfaction. Out of 350 distributed questionnaires, 242 Pakistani employees working in the manufacturing and service sectors completed the survey. As hypothesized, workaholism is positively associated with work-family inter-role conflicts and significantly harms the health of workaholics. This diminished wellbeing leads to reduced job satisfaction and decreased life satisfaction. The study provides implications for HR managers and policymakers in Pakistan, highlighting workaholism's pervasive influence on employee wellbeing. Specifically, the results demonstrate the role of work-family inter-role conflicts in exacerbating ill health, urging organizations to prioritize work-life balance to improve workforce wellbeing and productivity.*

Keywords: Workaholism, wellbeing, ill health, job satisfaction, life satisfaction, inter-role conflict, work-family conflict.

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The Impact of Workaholism on Employees' Wellbeing: An Investigation in a Non-Western Economy

1. Introduction

In today's competitive landscape, rapid advancements in business technology, global market dynamics, and a shift toward task-oriented employment structures have significantly transformed the labor market (Herbert et al., 2020; Molino et al., 2019). As a result of these evolving work paradigms, individuals are increasingly driven by an intrinsic desire to excel in their careers and achieve success in life. Work has evolved beyond its traditional role, now serving as a source of income, a component of personal identity, and a pathway to a purposeful life. However, amid the many benefits of work, a troubling issue has emerged: workaholism (Chan, 2023; Daniel, 2019; Schaufeli et al., 2008a).

Workaholism is characterized by an excessive preoccupation with work, marked by strong determination and motivation to engage in work-related activities (Andreassen et al., 2014; Molino et al., 2019). The rise of computer-based work environments and the constant connectivity provided by the internet have further blurred the boundaries between personal life and work, especially for workaholics (Molino et al., 2019; Van Beek et al., 2012).

While existing studies have explored the effects of modern work environments and the erosion of work-life boundaries (Herbert et al., 2020; Molino et al., 2019; Van Beek et al., 2012), a comprehensive understanding of workaholism and its effects is still needed. Although monetary incentives and personal ambitions have been identified as motivating factors for work (Chan, 2023), there is a lack of research addressing the drivers that either exacerbate or mitigate workaholism—a critical concern in today's workforce. Previous research has highlighted the negative impact of workaholism on individuals' wellbeing (Schaufeli et al., 2008a), but further investigation is necessary to fully understand the psychological and health implications, including stress and burnout, associated with workaholism in the context of evolving work dynamics.

Moreover, as the emphasis on work-life balance strategies grows (Derks & Bakker, 2010), it is crucial to examine the strategies that organizations and employees utilize to achieve and maintain this balance, particularly in preventing workaholism. Current research has predominantly focused on Western contexts, highlighting the need to explore how cultural and regional differences may affect the prevalence and consequences of workaholism in varied settings, such as Pakistan. Addressing these research gaps presents valuable opportunities for further investigation, potentially illuminating the intricate relationship between modern work environments, wellbeing, and workaholism.

To address existing research gaps, the current study investigates the intricate relationship between modern work environments, wellbeing, and workaholism. Modern computer-based work settings, monetary incentives, personal ambitions, work-life balance strategies, and cultural differences can affect employees' vulnerability to workaholism and result in psychological and physical health consequences amid changing work dynamics. The primary objective is to thoroughly examine the influence of workaholism on work-family inter-role conflicts and explore how work-family inter-role conflicts affect the physical and psychological health of workaholics. Additionally, this study also assesses the impact of ill health on workaholics' job and life satisfaction.

The research questions guiding this study are: (i) Does workaholism exist in Pakistan, and if so, what is the extent among working professionals? (ii) Does workaholism contribute to inter-role work-family conflict, preventing workaholics from maintaining a balance between their work and family lives? (iii) Is there a significant connection between work-family conflict and negative health outcomes that affect the wellbeing of workaholics? (iv) How satisfied are workaholics with their jobs, and to what extent are they content and happy in their lives? This study enhances the existing literature by employing a structural equation model (SEM) to investigate workaholism in the context of a developing economy like Pakistan, allowing for a comprehensive analysis of this phenomenon and the testing of complex hypotheses.

We acknowledge that workaholism, marked by an excessive and compulsive work tendency, often results in work-life conflicts, as employees find it challenging to balance their professional and personal roles. This struggle can adversely affect their physical and psychological wellbeing and may lead to health issues (Khatri & Shukla, 2024). Compromised overall health can subsequently diminish life satisfaction and decrease job performance among workaholics, ultimately impacting their job satisfaction (Gillet et al., 2021).

This research is structured into several sections. Section 2 reviews the literature and formulates the hypotheses. Section 3 outlines the research design, questionnaire, and data collection methods. Section 4 presents the study's results. Section 5 discusses the findings and managerial implications, while Section 6 addresses the limitations and suggests directions for future research.

2. Theoretical Background and Hypotheses Development

2.1. The Theory of Human Capital

Human capital theory posits that employees have access to a limited set of resources, which they allocate to various behaviors and energies—both psychological and physical—over time (Becker, 1991, 1993). This theory is closely related to the concept of workaholism (Tan et al., 2023). It further suggests that employees categorize their activities into broad spheres such as family, leisure, and work, allowing them to decide how to distribute their resources among these areas (Becker, 1991, 1993; Noam, 2019). Typically, workaholics devote a significant amount of time to work, often at the expense of non-work activities. Since energy and time are finite resources, the time and energy spent on work cannot be allocated to other aspects of life, such as relationships with family and friends (Schaufeli et al., 2009a). This can lead to work-home conflict and may result in the fragmentation of human capital. The psychological and physical stress associated with workaholism can negatively impact both life and job satisfaction (Wong & Chan, 2018).

2.2. Workaholism

Workaholism, a term that draws on the concept of alcoholism, was first introduced by Oates (1971, p. 1), who associated workaholism with heavy drinking, defining it as 'an excessive compulsion to work which resulted in negative outcomes brought about by an addiction to work.' Earlier definitions of workaholism often described it as employees working 50 hours or more per week (Andreassen, 2013; Chan, 2023; Snir & Harpaz, 2021). Today, this characterization applies to many workers, especially at the management level, where individuals typically commit at least 50 hours to their jobs each week (Brett & Stroh, 2003). However, viewing workaholism solely through the lens of lengthy working hours is misleading, as it overlooks the addictive nature of this behavior (Shimazu & Schaufeli, 2009).

Workaholics tend to constantly ruminate about their jobs and experience a strong, intrinsic drive to put forth maximum effort, which they find difficult to resist (McMillan & O'Driscoll, 2006; Tahir & Aziz, 2019). Consequently, these individuals often feel compelled to perform their tasks (Van Beek et al., 2012). It is important to note that some employees may work long hours without genuine engagement due to various factors, such as financial pressures (Atroszko & Atroszko, 2020; Porter, 2004), peer influence, marital issues (Mir & Kamal, 2018; Schaufeli et al., 2008a), or aspirations for career advancement (Schaufeli et al., 2009b; Van Beek et al., 2012). As a result, workaholism can be understood through three common attributes identified across multiple definitions.

First, workaholics invest significant time in job-related tasks, characterized by excessive hard work (Gomes et al., 2023; Schaufeli et al., 2008b). Second, they find it challenging to detach from their work, often ruminating about job tasks even outside the workplace. Other studies have described workaholics as individuals who devote more energy and time to their jobs than is necessary (Gordon, 2021; Machlowitz, 1979), indicating a passion and fanaticism for their work, which reflects the affective dimension of workaholism. Thus, workaholics exhibit compulsive work behavior.

Third, workaholics operate beyond rational expectations to meet organizational and administrative demands. This characteristic is a culmination of the first two attributes, driving both excessive effort and compulsive work habits in individuals (Shimazu & Schaufeli, 2009; Xu et al., 2023). Schaufeli et al. (2008b) define workaholism as an obsession with work, ultimately leading to hard work. This perspective aligns with other academic definitions, which note that intense effort and long hours, often at the cost of other important life roles, combined with a strong internal drive, are the primary factors contributing to workaholism (Shimazu & Schaufeli, 2009; Ng et al., 2007). Therefore, workaholism comprises two main components: a strong internal drive and a commitment to hard work (Schaufeli et al., 2009b).

Some researchers argue that workaholism can be seen as a positive trait, emphasizing the benefits that arise from additional work efforts (Di Stefano & Gaudiino, 2018). In a positive light, workaholics are viewed as dependable workhorses, while in a negative context, they may be likened to 'Seven-Eleven' associates, waking early for work and returning home late, thus spending less time with their families (Gordon, 2021; Ishiyama & Kitayama, 1994). Consequently, workaholism is conceptualized as a state of mind in which an individual is overly preoccupied with their work, driven by strong determination and motivation, and channeling this energy into work-related activities (Andreassen et al., 2014; Molino et al., 2019).

2.3. Workaholism and Work-Home Conflict

The outcomes of workaholism have been the subject of much speculation but lack sufficient controlled research. It is widely believed that workaholism negatively affects personal happiness, wellbeing, health, and increases stress and tension (DeMott et al., 2022). This belief aligns with the role scarcity hypothesis proposed by Edwards and Rothbard (2000), which suggests that conflicting expectations from work and non-work domains contribute to mixed-role inconsistency. Workaholism is associated with various negative consequences for employees, their partners, and their organizations (Zakaria et al., 2022). Specifically, the extreme commitment of workaholics to their jobs often results in frustration due to their inability to engage in home and family life.

Previous studies consistently show that workaholics experience greater work-home imbalance compared to other employees, with married workaholics facing higher levels of depression and sleep issues (Ariapooran, 2019; Cheung et al., 2018; Khatri & Shukla, 2024). For example, workaholic employees experience more relational conflict and challenges at work (Mudrack, 2006), report lower job satisfaction (Burke & MacDermid, 1999), experience greater work and personal life interference (Sahar & Waqar, 2014; Schaufeli et al., 2009a), and have fewer social interactions outside of work (Abdi et al., 2018; Bonebright et al., 2000; Khatri & Shukla, 2024). Furthermore, the incidence of marital separation is higher among workaholics compared to non-workaholics (Kenyhercz et al., 2022; Robinson et al., 2001). Therefore, we propose the following hypothesis:

Hypothesis 1: Workaholism has a significant positive impact on work-family conflict.

2.4. Work-Family Role Conflict and Ill-Health

Constant conflict in managing work and personal life can pose a significant obstacle to effectively addressing domestic responsibilities and demands. This conflict may challenge an individual's ability to develop and maintain a positive self-perception related to household roles (Lee et al., 2022). Since both family and work responsibilities are essential components of adult identity, difficulties in forming and preserving professional and familial identities can be experienced as traumatic (Frone et al., 1997; Tabassum et al., 2017). Such challenges may result in stress, anxiety, alcohol abuse, psychological strain, high blood pressure, and depression (Allen & Meyer, 1990; Kayaalp et al., 2021). Theories on job pressure and role strain indicate that conflicts arising from the demands of occupational, parental, and spousal roles contribute to an imbalance and conflict between work and family life. The mental challenges associated with managing multiple roles can lead to negative health outcomes (Chandola et al., 2004; Chandola et al., 2019).

Despite the many positive aspects of their jobs, some employees are motivated—both externally and internally—to perform excessively and compulsively. These individuals are known as workaholics (Andreassen, 2013; Schaufeli et al., 2008b). Workaholism can give rise to work-family conflict, leading to negative physical, psychological, and social consequences, including social isolation (Adamovic, 2022; Chan et al., 2018; Di Stefano & Gaudiino, 2018; Qayyum et al., 2022). The primary negative impact of excessive work is stress, which can disrupt an employee's physical health, thoughts, emotions, and behavior. If work-related stress is not managed, it can result in various health issues, including high blood pressure, obesity, anxiety, substance use (such as alcohol and tobacco), sleep disturbances, and even death. Based on the discussion of the existing literature, the following hypothesis is proposed:

Hypothesis 2: Work-family role conflict is positively related to ill-health.

2.5. Ill-Health and Job Satisfaction

Physical and mental health refers to an individual's overall wellbeing. Poor mental health can indicate underlying physical health issues, and employees experiencing physical complaints often have a higher likelihood of suffering from distress, anxiety, and depression (Sjöberg et al., 2020; Wong & Chan, 2018). Additionally, dynamic and fluctuating work environments may introduce unknown risks, presenting both challenges and opportunities for employees, companies, and authorities (Haarhaus & Liening, 2020). Workaholics, burdened by physical ailments and psychological strain, also face consequences regarding their sense of fulfillment, including satisfaction with both family and work (McCauley et al., 2018).

Workaholics tend to exert intense effort in their jobs not because they love their work, but due to an uncontrollable intrinsic motivation. As a result, they often report low levels of job satisfaction, feeling that they are not performing up to expectations (Kruglanski et al., 2021; Nizami et al., 2006). Their negative moods and irritable behavior can disrupt the organizational environment, causing problems for colleagues and subordinates and ultimately damaging their relationships with others (Burke, 1999; Taris et al., 2010). Furthermore, previous studies have indicated that workaholism is associated with lower job and career satisfaction (Di Stefano & Gaudiino, 2018). Based on this existing literature, the following hypothesis is proposed:

Hypothesis 3a: The ill-health of employees has a negative effect on their job satisfaction level.

2.6. Ill Health and Life Satisfaction

Life satisfaction is a measure of wellbeing, defined as how individuals evaluate their lives and futures based on factors such as economic status, relationships, mood, and education (Kaya & Çenesiz, 2020). Family dynamics also play a crucial role in life satisfaction. Research indicates that women who choose not to have children often report higher levels of life satisfaction (Stahnke et al., 2020). Conversely, parenthood can significantly affect an individual's overall life satisfaction (Hussain et al., 2020). Studies have shown that parents frequently experience lower marital and overall life satisfaction, which can lead to increased levels of depression and stress (McLanahan & Adams, 1987; Temitope, 2015).

Furthermore, workaholics tend to invest excessive time and energy into their jobs while neglecting important personal roles (Ng et al., 2007), which can compromise family structure (Knies et al., 2016). Consistent with this view, previous research has found that workaholics who experience high levels of work-related stress and anxiety—often accompanied by physical symptoms such as muscular tension and restlessness—report low family and overall life satisfaction (Di Stefano & Gaudiino, 2018; Taris et al., 2010; Temitope, 2015) and poor relationship quality with their partners (Karapinar et al., 2020; Robinson et al., 2001). Based on the literature reviewed, the following hypotheses are proposed:

Hypothesis 3b: The ill-health of employees is negatively associated with life satisfaction.

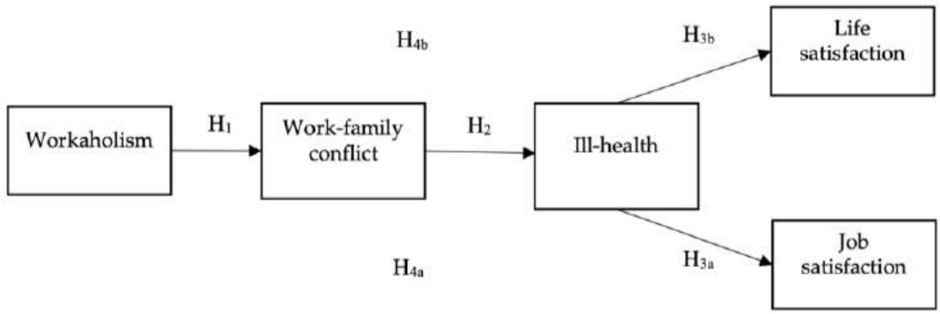
Hypothesis 4a: Work-family conflict and the ill-health of employees sequentially mediate the relationship between workaholism and job satisfaction.

Hypothesis 4b: Work-family conflict and the ill-health of employees sequentially mediate the relationship between workaholism and associated life satisfaction.

2.7. *Research Model*

Figure 1 demonstrates the theoretical framework for the study. This model proposes that workaholism affects work-life conflict, which further contributes to ill-health. Subsequently, ill-health has an undesirable impact on work as well as personal life gratification.

Figure 1: Theoretical framework



3. Methodology and Data Collection

3.1. *Participants and Procedure*

Research indicates that workaholism is commonly found among white-collar professionals (Aziz & Cunningham, 2008). In Pakistan, studies suggest that many white-collar workers are dissatisfied with their work-life balance and exhibit a higher tendency towards workaholism (Ghazi, 2015; Sultan & Hanif, 2013). This study utilized purposive sampling to focus specifically on white-collar professionals to understand the effects of workaholism in relation to job demands and pressures. The sample consisted of all professionals in white-collar positions in Pakistan, which encompasses professional, suit-and-tie desk jobs that make up over 37 percent of the Pakistani workforce. Previous research has also identified workaholism in sectors such as banking (Hameed et al., 2013; Tufail et al., 2021) and healthcare (Saleem et al., 2022).

While Ellahi et al. (2021) suggested exploring workaholism in service industries, Adil and Qaiser (2020) and Abbas et al. (2019) examined stress and burnout within the manufacturing sector. Consequently, our study includes both manufacturing and service firms in the sample. For structural equation modeling (SEM), Kyriazos (2018) recommends a sample size greater than 200. In this study, we distributed 350 questionnaires to full-time professional men and women, many of whom often work overtime and hold demanding emotional and physical positions.

Initially, purposive sampling was implemented. Respondents received the questionnaire upon meeting two criteria: 1) they were full-time employees, and 2) they specified the number of hours they worked. The sampling frame consisted of full-time employees working at least 40 hours per week. Once the criteria were confirmed, data collectors requested participation in the study, and upon agreement, the questionnaire was provided. Completing the questionnaire took approximately 12-15 minutes. In the first round, we collected 145 questionnaires. To increase the sample size, respondents were asked to suggest at least two colleagues (Faugier & Sargeant, 1997), resulting in the identification of an additional 110 respondents.

Subsequently, we asked the new group of respondents the filter questions and inquired if they wished to participate in the study. Out of the 110 nominated professionals, 97 completed the questionnaire. The final usable dataset consisted of 242 surveys, yielding a response rate of 69.14 percent. To assess potential non-response bias, we conducted a Chi-square analysis comparing the demographic characteristics of early and late respondents (Neufeld et al., 2023). The results showed no significant differences, indicating a lack of non-response bias.

3.2. Operationalization of Variables

Workaholism is measured by the ten-item Dutch workaholism scale (DUWAS) established by de Beer et al. (2022). Examples include 'I seem to be in a hurry and racing against the clock' and 'I feel guilty when I take time off work'. The questions were evaluated on a Likert scale (4 = totally agree to 1 = totally disagree). See the Appendix for the list of items.

To measure conflict, the work-family conflict scale (WFC) (Loscalzo et al., 2019; Netemeyer et al., 1996) is used, which is a five-item construct. An example item is 'My job produces strain that makes it difficult to fulfill my family duties'. Each question is evaluated on a five-point Likert scale (5 = strongly agree to 1 = strongly disagree).

To gauge the ill-health of an employee, psychological misery and physical illnesses are measured. This was calculated by employing the sub-scales of the brief job stress questionnaire (BJSQ) (Hidaka et al., 2021; Shimomitsu et al., 1998). Ill-health is calculated using 25 items: for example, 'I have felt angry', 'I have felt extremely tired', 'I have felt worried or insecure', 'I have been depressed' and 'I have a pain in the back'. For each item, a six-point Likert scale is used (1 = almost never to 6 = almost always).

Life satisfaction is gauged with the satisfaction with life scale (SWLS) (Diener et al., 1985; Merino et al., 2021). The SWLS is estimated on a seven-point Likert scale, and this instrument contains five items to calculate life satisfaction (1 = strongly disagree to 7 = strongly agree). Sample questions include 'I am satisfied with my life' and 'In most ways, my life is close to my ideal'.

Five items were used to estimate general job satisfaction (Dayal & Verma, 2021; Price & Mueller, 1986): for example, 'All in all, how satisfied are you with the work itself of your job?' All satisfaction items used a five-point scale (1 = very unsatisfied to 5 = very satisfied).

The demographic variables used include marital status, gender, age, education level, position in the organization, job experience, income, industry, sector, and department.

3.3. Data Analysis

SEM is conducted using Amos 18. The threshold for factor loadings of all items is set at 0.5, as per Wu et al. (2011). Items with factor loadings below this threshold are excluded from the analysis. Standardized confirmatory factor analysis (CFA) is then employed to assess the composite reliability (CR) of the latent factors, adhering to a cut-off value of 0.7 (Shook et al., 2004). The data is further evaluated for both discriminant validity and convergent validity. To test the model's goodness of fit, we utilize the root mean square error of approximation (RMSEA) and the chi-square divided by the degrees of freedom (CMIN/df). Additionally, various incremental fit indices are analyzed, including the incremental fit index (IFI), comparative fit index (CFI), non-normed fit index (NNFI or TLI), and normed fit index (NFI). The results from these indices indicate that the model fit is satisfactory.

4. Empirical Results

4.1. Sample Demographics and Correlations

The sample demographics are shown in Table 1. The total sample was 242. This sample comprises 54.5 percent males and 45.5 percent females, mostly aged 31–40 (40.5 percent), and most were married (52.4 percent). Most respondents had a master's degree (70.3 percent) and were working as middle managers (52 percent) with 6–15 years of work experience (23.1 percent). Most respondents (42.2 percent) had an income of Rs 100,000–500,000. Lastly, respondents worked both in manufacturing (50 percent) and services (50 percent).

Table 1: Sample Demographics

Demographics	Frequency (n)	Percentage (%)
Gender		
Male	132	54.5%
Female	110	45.5%
Age (years)		
20-25	38	15.7%
25-30	46	19.0%
31-40	98	40.5%
41-50	60	24.8%
Marital status		
Married	127	52.5%
Married with children	90	37.2%
Single/not married	25	10.3%
Education		
Bachelor's degree	58	23.9%
Master's degree	170	70.3%
MPhil/PhD	14	5.8%
Managerial position		
Top management	39	16.0%
Middle management	126	52.0%
Lower-level management	77	31.8%
Job experience (years)		
0-5	51	21.07%
6-15	56	23.14%
16-20	53	21.9%
21-30	38	15.7%
31-40	31	12.8%
40+	13	5.37%
Income		
Rs 20,000-40,000	37	15.3%
Rs 40,001-99,999	51	21.0%
Rs 100,000-500,000	102	42.2%
Rs 500,001+	52	21.5%
Industry		
Manufacturing	121	50.0%
Services	121	50.0%
Total	242	100%

Table 2 illustrates the correlations among the study variables, highlighting the impact of these variables on one another and the direction of their relationships. As anticipated, there is a positive correlation between ill-health and work-family conflict ($p < 0.01$), with a correlation strength of 38 percent. Additionally, job satisfaction is negatively correlated with the ill-health of a workaholic ($p < 0.01$), showing a correlation strength of 19.3 percent. Job satisfaction is also negatively correlated with work-family conflict, though this correlation is weaker at 7 percent and is statistically insignificant. Moreover, ill-health is negatively correlated with life satisfaction ($p < 0.01$), with a correlation strength of 20.8 percent. Finally, workaholism demonstrates a positive correlation with both work-family conflict and ill-health, with correlation strengths of 46 percent and 25 percent, respectively ($p < 0.01$).

Table 2: Correlations

	Ill-health (IH)	W-FC	JS	LS
Work-family conflict (W-FC)	0.383***			
Job satisfaction (JS)	-0.193***	-0.007		
Life satisfaction (LS)	-0.208***	0.010	0.596***	
Workaholism (WRKHLSM)	0.257***	0.460***	0.022	0.009

*** Correlation is significant at the 0.01 level.

4.2. Common Method Variance

Common method variance was assessed using two approaches. The first approach utilized Harman's one-factor test. In this test, the eigenvalues of the variables must exceed 1 to suggest the existence of multiple factors (Harman, 1967; Podsakoff et al., 2003). The initial factor accounted for 45.918 percent of the total 68.729 percent variance extracted, indicating that the discrepancy was not solely captured by the initial factor but also by other variables. Additionally, Harman's one-factor test was evaluated using CFA. In this analysis, all items were loaded onto a single latent variable, and the model indices were tested. The model fit did not satisfy the established criteria, suggesting a lack of common method variance.

4.3. Measurement Model

The CFA results indicate that model fit is acceptable. The factor loadings for all items across all variables are above 0.5; therefore, no items from any variable were eliminated. Table 3 presents the factor loadings for all items. The composite reliability (CR) values range from 0.845 to 0.969, demonstrating an acceptable level of consistency across all factors. Additionally, Table 3 illustrates the convergent validity, which is assessed using discriminant validity (DV) and average variance extracted (AVE).

Table 3: Results of Confirmatory Factor Analysis

Construct	Items	Factor loading	Reliability CR	Convergent validity AVE	Discriminant validity DV
Workaholism	WH1	0.675	0.845	0.732	0.856
	WH2	0.521			
	WH3	0.546			
	WH4	0.545			
	WH5	0.581			
	WO1	0.592			
	WO2	0.617			
	WO3	0.69			
	WO4	0.672			
	WO5	0.535			
Work-family conflict	WF1	0.738	0.872	0.577	0.76
	WF2	0.788			
	WF3	0.823			
	WF4	0.777			
	WF5	0.662			
Ill health	ILH1	0.71	0.969	0.942	0.971
	ILH 2	0.743			
	ILH 3	0.728			
	ILH 4	0.796			
	ILH 5	0.784			
	ILH 6	0.733			
	ILH 7	0.832			
	ILH 8	0.765			
	ILH 9	0.801			
	ILH 10	0.691			
	ILH 11	0.68			
	ILH 12	0.777			
	ILH 13	0.84			
	ILH 14	0.757			
	ILH 15	0.646			
	ILH 16	0.771			
	ILH 17	0.711			
	ILH 18	0.814			
	ILH 19	0.824			
	ILH 20	0.725			
	ILH 21	0.754			
	ILH 22	0.761			
	ILH 23	0.78			
	ILH 24	0.828			
	ILH 25	0.812			
Job satisfaction	JS1	0.52	0.896	0.449	0.67
	JS2	0.806			
	JS3	0.831			
	JS4	0.619			
	JS5	0.501			

Construct	Items	Factor loading	Reliability CR	Convergent validity AVE	Discriminant validity DV
Life satisfaction	LS1	0.776	0.889	0.618	0.786
	LS2	0.811			
	LS3	0.893			
	LS4	0.8			
	LS5	0.626			

Indices of the model are divided into incremental and absolute fit indices (Bollen, 1989). The model fitness is estimated using several indices: CFI, TLI, NFI, CMIN/df, IFI, and RMSEA. The CMIN/df value is 2.841, falling within the acceptable range of 1-3, and the RMSEA is 0.028, which is below the threshold of 0.05. The incremental fit index (IFI) is 0.935, the comparative fit index (CFI) is 0.937, the non-normed fit index (NNFI or TLI) is 0.918, and the normed fit index (NFI) is 0.948. All indices exceed 0.90, indicating a good model fit.

4.4. Path Analysis

Table 4 presents the results of the structural analysis, which includes demographics as control variables. Hypothesis 1 examines the relationship between workaholism and work-family conflict. As anticipated, workaholism is positively associated with work-family inter-role conflict ($\beta = 0.604$, $p < 0.01$). This estimate suggests that a 1 percent increase in workaholism leads to a 60 percent increase in work-family role conflict ($\beta = 0.604$). In Hypothesis 2, work-family role conflict is regressed on ill-health, encompassing both physical distress and psychological issues experienced by workaholics.

Table 4: Results of Structural Model

Relationships	R^2	β	p-value
H1: Workaholism→ Work-family conflict	0.19	0.604	0.00
H2: Work-family conflict → Ill health	0.39	0.406	0.00
H3a: Ill health → Job satisfaction	0.68	-0.213	0.00
H3b: Ill health → Life satisfaction	0.56	-0.172	0.00

The results indicate a positive impact ($\beta = 0.406$, $p < 0.01$) of work-family conflict on ill health. This finding suggests that a 1 percent increase in the imbalance between work and life leads to a 40.6 percent increase in overall illness among workaholics, including both physical illnesses and psychological strain. Hypotheses 3a and 3b examine the effects of ill health on job satisfaction and life satisfaction, respectively. The results show that the ill health of workaholics is associated with low job satisfaction (β = -0.213, p < 0.01) and diminished overall life satisfaction (β = -0.172, p < 0.01). This implies that a 1 percent increase in ill health among workaholics results in a 21.3 percent decrease in job satisfaction (β = -0.213) and a 17.2 percent decrease in overall life satisfaction (β = -0.172), as anticipated.

4.5. Additional Analysis

Table 5 shows the sequential mediation of work-family conflict and ill-health between workaholism and job and life satisfaction. The results indicate that the indirect effect is insignificant (p > 0.05), suggesting that neither ill health nor work-family conflict mediates the relationship between workaholism and life satisfaction or job satisfaction.

Table 5: Results of Mediation

Relationships	**β**	**p-value**	**Results**
Mediation with life satisfaction	0.61	0.507	No Mediation
Direct effect			
Workaholism → life satisfaction			
Workaholism → ill-health	0.783	0.052	
Ill-Health → life satisfaction	0.551	0.04	
Indirect effect			
Workaholism → ill-health → life satisfaction	0.437	0.681	
Mediation with job satisfaction	0.321	0.608	No Mediation
Direct effect	0.674	0.050	
Workaholism → job satisfaction	0.752	0.041	
Workaholism → ill-health			
Ill-Health → job satisfaction			
Indirect effect			
Workaholism → ill-health → job satisfaction	0.347	0.76	
Sequential mediation			
Indirect effect			
Workaholism → work-family conflict → ill-health → job satisfaction			
	0.42	0.92	No mediation
Workaholism → work-family conflict → ill-health → job satisfaction			
	0.35	0.84	No mediation
CMIN/DF = 2.367			
IFI = 0.967			
TLI = 0.917			
CFI = 0.912			
RMSEA = 0.041			

5. Discussion and Managerial Implications

This study explores the impact of workaholism on the conflict between work and personal life among employees in Pakistan.

Distinguishing itself from prior research, this study centers on workaholism within the context of a developing economy, employing SEM for data analysis. This approach sheds light on the complex interplay between workaholism, work-life balance, wellbeing, and job satisfaction, offering valuable insights for both academics and practitioners seeking to address these critical issues in non-Western settings.

The findings reveal that workaholism positively affects the conflict between work and personal life among employees identified as workaholics (Bakker et al., 2009; Burke, 2008; Karapinar et al., 2020; Shimazu & Schaufeli, 2009). This relationship aligns with previous studies indicating that workaholic employees experience heightened conflict between work and personal obligations (Mudrack, 2006), report greater work-family interference (Schaufeli et al., 2009a; Taris et al., 2005), and tend to have weaker and less fulfilling social relationships outside of work.

Additionally, work-family role conflict is shown to have a direct influence on the wellbeing of workaholics. When workaholics struggle to balance their work and family responsibilities, fail to meet family demands, and continually ruminate on work during personal time, they may experience increased anger as well as mental and physical stress. Accordingly, theories on multiple-role strain suggest that conflicts between professional, spousal, and parental roles can contribute to adverse health outcomes and heightened stress levels among workaholics (Chandola et al., 2004; Chandola et al., 2019).

Finally, the impact of poor health on job and overall life satisfaction is evident in the path analysis results, which indicate a significant negative relationship between ill health and both job satisfaction and life satisfaction. This suggests that workaholics often feel dissatisfied with their jobs because they push themselves beyond the required performance levels. Due to deteriorating health, they struggle to meet the high standards they impose on themselves. This finding is consistent with previous research (Kruglanski et al., 2021). Similarly, an unhealthy workaholic, who is neither mentally relaxed nor physically fit, typically experiences unhappiness with life, resulting in low life satisfaction. This supports existing theories about the detrimental effects of workaholism on job and life satisfaction (Spagnoli et al., 2020).

The results of the sequential mediation analysis showed that workaholism's impact on life and job satisfaction, as mediated by work-family conflict and ill health, was not significant. This finding contradicts previous research (Shimazu et al., 2020), which suggested that workaholism contributes to dissatisfaction in both life and job, primarily through work-family conflict and health issues. This discrepancy indicates a need for further investigation into the relationship between workaholism and satisfaction.

The findings of this research present several important implications for management, particularly regarding the need to mitigate workaholism. Stress levels are reportedly increasing, with work serving as a major factor exacerbating individual stress (Daniel, 2019). In organizations where long working hours are equated with success, it is crucial to reassess the prevailing culture and values. The emphasis on extended hours should be replaced with a culture that promotes working smarter rather than harder, prioritizing work-life balance as a fundamental value. Additionally, training programs should be implemented for employees on the verge of workaholism to help them cultivate healthier work habits (Hassett, 2022).

Training sessions and workshops that focus on problem-solving skills and effective time management may be beneficial since workaholics often take on more tasks than they can manage, frequently starting new responsibilities before completing existing ones (Ouweneel et al., 2012). Programs that foster determination and decisiveness could also help workers manage the increasing demands of the workplace by using techniques such as saying 'no' to colleagues, supervisors, or clients (Schabracq, 2005). Furthermore, to combat workaholism, employees must be encouraged to disconnect and recharge after a hectic workday, which can be facilitated by distractions in their demanding environments, allowing them to detach and recover. Lastly, incorporating practices such as meditation and religious activities may help workaholics achieve better mental and physical balance.

6. Conclusion, Limitations and Future Research Recommendations

The aim of this study is to measure the association between workaholism and employees' wellbeing by assessing how work-family conflict, along with physical and psychological health, influences life satisfaction and job satisfaction. The research has some limitations, primarily due to time constraints. Future studies should consider specific months in relation to organizational activities; for instance, the period from January to February may align with audit seasons, which can significantly heighten employee stress.

Additionally, workaholism could be examined in other industries, such as among entrepreneurs managing small to medium-sized enterprises. However, due to time limitations, this research focused exclusively on two sectors in Pakistan. As a result, the generalizability of the findings may be restricted, as data was primarily collected from a specific geographic region and predominantly from manufacturing and service-oriented industries.

This study has explored the impact of workaholism on employees' overall mental and physical wellbeing, job satisfaction, and life happiness. Nonetheless, the underlying factors that lead to workaholism still require further investigation. Future research could explore whether personality traits or organizational culture play a more significant role in fostering workaholism. Furthermore, it would be beneficial to investigate workaholism in relation to gender to determine which gender experiences it more frequently. Lastly, examining the long-term effects of workaholism would also provide valuable insights.

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Appendix

Questionnaire

Workaholism	I seem to be in a hurry and racing against the clock. I find myself continuing work after my co-workers have called it quits. I stay busy and keep my irons in the fire. I spend more time working than socializing with friends, on hobbies, or on leisure activities. I find myself doing two or three things at one time such as eating lunch while talking on the phone. It's important for me to work hard even when I don't enjoy what I'm doing. I often feel that there's something inside me that drives me to work hard. I feel obliged to work hard, even when it's not enjoyable. I feel guilty when I take time off work. It is hard for me to relax when I'm not working.
Work-family conflict	The demands of my work interfere with my home and family life. The amount of time my job takes up makes it difficult to fulfill family responsibilities. Things I want to do at home do not get done because of the demands my job puts on me. My job produces strain that makes it difficult to fulfill family duties. Due to work-related duties, I have to change my plans for family activities.
Ill-health	I have felt angry I have been inwardly annoyed or aggravated I have felt irritable I have felt extremely tired I have felt exhausted I have felt weary or listless I have felt tense I have felt worried or insecure I have felt restless I have been depressed I have thought that doing anything was a hassle I have been unable to concentrate I have felt gloomy I have been unable to handle work I have felt sad I have felt dizzy I have experienced joint pains I have experienced headaches I have had a stiff neck and / or shoulders I have had lower back pain I have had eyestrain I have experienced heart palpitations or shortness of breath I have experienced stomach and / or intestine problems I have lost my appetite I have experienced diarrhea and / or constipation

Job satisfaction	All in all, how satisfied are you with the work itself of your job?
	All in all, how satisfied are you with your co-workers?
	All in all, how satisfied are you with the supervision?
	All in all, how satisfied are you with the promotional opportunities?
	All in all, how satisfied are you with the pay?
Life satisfaction	In most ways my life is close to my ideal.
	The conditions of my life are excellent.
	I am satisfied with life.
	So far, I have gotten the important things I want in life.
	If I could live my life over, I would change almost nothing.
Demographics	Age, gender, marital status, education, managerial position, job experience, income, industry, department and sector.

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Strategic Turnaround Management: Defining the Success Factors of a Turnaround

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Abstract: *The primary objective of this study is to address the limitations in existing turnaround management literature by providing managers with a reliable framework and step-by-step guidance for successful turnarounds. This research examines ten real-life turnaround experiences through primary evidence gathered from semi-structured interviews with experienced turnaround and insolvency practitioners. Using a qualitative and phenomenological approach, this study uncovers the lived experiences of these managers, exploring the nuances and intricacies of their turnaround journeys. This research aims to identify key success factors and extract practical insights from the narratives of the interviewed managers. The resulting framework consists of five essential steps: (i) analysis and diagnosis, (ii) defining tailored strategies, (iii) execution and action, (iv) leadership and change management, and (v) agile decision-making. This comprehensive framework empowers leaders to initiate the turnaround process with a deep understanding of the contextual realities. By identifying obstacles through rich qualitative data, managers can implement appropriate actions to halt the decline and pave the way for a successful recovery. The phenomenological approach adds depth to the study, ensuring that the proposed framework is not only theoretically sound but also grounded in the real-world experiences of turnaround practitioners.*

Keywords: Framework, management, restructuring, strategy, success factors, turnaround.

JEL Classification: G34, L1, L25, M1, M10, M19, M21.

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Strategic Turnaround Management: Defining the Success Factors of a Turnaround

1. Introduction

In today's competitive and unpredictable business environment, organizations encounter numerous challenges that jeopardize their performance and sustainability. No company is completely immune to economic distress, and there often seems to be an aura of inevitability surrounding eventual organizational failure (Oehninger et al., 2020). Factors such as rapid digitalization, internal pressures, and unforeseen threats can lead to a decline in a company's performance (Loosemore, 1998). The fast pace of technological innovation and ongoing digital transformation has introduced new competitive dynamics and complexities within organizations. To stay ahead in the market, companies must continuously adopt new strategies, innovate, and swiftly respond to changing market demands (Hauschildt, 2008; Kim & Mauborgne, 2023). Failure to do so risks losing their competitive edge, shrinking market share, and potentially facing business decline.

These challenges can significantly impact organizational performance, making prompt and effective action essential (Francis & Desai, 2005). However, enduring, successful turnarounds are rare; only about 30 percent of change initiatives succeed (Beer & Nohria, 2000). This high failure rate underscores the difficulty of revamping complex organizational structures and executing effective turnaround strategies, particularly during economic downturns when companies must not only recover but also build resilience for future challenges.

Poor performance during downturns often arises from failures in formulating and executing turnaround plans, as well as an inability to sustain these strategies once a crisis has passed. Effective turnaround strategies necessitate substantial organizational changes, strong leadership, clear communication, and solid change management practices. Yet, many companies struggle to implement these strategies, leading to further decline. Without timely action, a company's very existence can be jeopardized, emphasizing the importance of successful turnarounds.

Turnaround strategies are crucial for countering decline, with retrenchment being a commonly employed tactic (Santana et al., 2017). Retrenchment may involve cost-cutting, asset sales, or staff reductions to improve financial stability. While these measures can provide short-term relief, they are often insufficient for long-term recovery and growth. Companies must also concentrate on strategic renewal, which includes reevaluating business models, exploring new markets, and fostering innovation. Despite the significance of these strategies, comprehensive research on turnaround management frameworks remains limited (Markides, 2006; Schneider & Spieth, 2013).

Previous studies on turnarounds have frequently failed to offer a complete approach for leaders, managers, and practitioners, providing limited guidance. Many existing models are prescriptive and do not take into account the unique contexts influencing turnaround success. Furthermore, there is a lack of empirical research examining the dynamics of decline and turnaround strategies within a robust, practical framework. This gap highlights the necessity for a clear, multifaceted set of practices to assist practitioners in complex turnaround situations. Consequently, there is an urgent need for an effective turnaround framework that addresses these challenges and empowers companies to achieve rapid and sustainable turnarounds.

This study aims to address this gap by exploring the real-life experiences of companies that have successfully recovered from challenging times through innovative strategies. By examining businesses that have turned their financial situations around, this research seeks to identify the key factors that contribute to successful recoveries and how these elements can be incorporated into a practical guide for effective turnaround management. A significant motivation for this study is the high failure rate of corporate turnarounds, highlighting the need to better understand what drives successful recoveries. Despite having access to ample resources and expertise, many organizations struggle to implement effective turnaround strategies. This underscores the complexity of turnaround management and emphasizes the necessity for research that connects theoretical concepts to real-world applications. The objective is to provide actionable insights that assist in designing and implementing effective turnaround strategies across various organizational contexts.

This research contributes to the existing literature on management strategies and corporate turnarounds by clarifying the elements that make these approaches successful. It aims to bridge the gap in current research by linking the concepts of decline, turnaround, and innovation and developing a comprehensive framework for turnaround management. The notion of decline refers to a prolonged period of negative performance, often marked by financial losses, diminishing market share, and declining stakeholder confidence.

Turnaround strategies are intentional actions taken to counteract this decline and restore organizational performance. In the context of this study, innovation involves developing and implementing new ideas and processes that create value. Creating a comprehensive framework entails identifying key success factors and integrating them into a structured approach that guides turnaround efforts. Thus, this study seeks to provide an in-depth understanding of the factors leading to successful corporate turnarounds, with a special emphasis on developing a robust framework for turnaround management. By connecting theory to practice, this research aims to offer valuable insights for scholars, practitioners, and policymakers interested in the dynamics of organizational recovery and growth.

The structure of the remainder of the study is as follows: Section 2 reviews the existing literature on corporate decline, turnaround, innovation, and framework development, highlighting the current scarcity of research linking these concepts. Section 3 outlines the research methodology, detailing case selection, data collection, and analysis processes. This methodology is designed to capture the complexities of turnaround scenarios and provide rich, contextual insights. Section 4 presents the findings and discussion, drawing on both case studies and existing literature. The findings identify key factors contributing to successful turnarounds, including strong leadership, a clear strategic vision, and effective communication. Finally, Section 5 offers a practical turnaround framework, while Section 6 concludes the study and provides recommendations for future research.

2. Literature Review

2.1. Corporate Turnaround

Corporate turnaround has been defined in various ways by experts and scholars. It can be described as a dynamic process involving a series of activities that guide firms from a state of decline to a period of sustained success (Barker et al., 2024; Schmitt & Raisch, 2013). Additionally, turnaround is often characterized as a change management strategy that aims to induce significant transformations in an organization's structures, processes, culture, and environmental orientation (French et al., 2005). Nystrom and Starbuck (2015) further define it as a defensive approach that relies on reactive measures to address corporate financial issues.

Despite the differing definitions, change management scholars generally agree on the common elements of turnaround management (Beeri, 2012; Lascu, 2024; Yandava, 2012). They typically characterize it as an ecological, holistic, and human-centered approach that requires substantial changes in organizational beliefs and norms while implementing radical strategies for transformation across structures, processes, and workflows. In this vein, Scherrer (2003) describes a successful turnaround as a complex process that relies on a capable management team and a solid business foundation.

2.2. Success Factors of a Turnaround

For a successful transition, several crucial elements must be in place. While their absence creates a high-risk scenario for a turnaround, their presence does not guarantee automatic success (Onich, 2012). Key components include a managerial shift, whether through the appointment of capable new leaders or a change in the attitudes and approaches of existing management. It is vital that management possesses the necessary authority to act swiftly and effectively (Schweizer & Nienhaus, 2017). Additionally, a viable and competitive core operation, along with sufficient financial resources to implement the turnaround plan, is essential (Sulaiman et al., 2022). Together, these factors underscore the importance of a skilled and experienced management team, maintaining liquidity for operational support, sustaining a viable core business, and enabling prompt decision-making to stop losses and initiate the turnaround.

Numerous studies have analyzed the factors contributing to the success and failure of small or medium enterprises (SMEs) (see, for example, Carter & Van Auken, 2006; Lussier & Pfeifer, 2001; Lussier & Halabi, 2010; Perry, 2001; Saraiva et al., 2024; Van Gelder et al., 2007; Westhead et al., 2001). In addition to general economic conditions, critical factors include capital resources, the quality of accounting and financial management, effective planning, engagement of professional consultants, and the owner's management experience and training.

2.2.1. Managerial Change

Proponents of the management school argue that a firm's success or failure is primarily determined by its top management rather than its strategy. Although the specific reasons for a decline vary, they often point to deficiencies in management (Akpoviroro et al., 2023; Balgobin & Pandit, 2001; Boyle & Desai, 1991; Dallocchio et al., 2022; Kierulff & Petersen, 2009;

Maheshwari, 2000; Scherrer, 2003). Managers with long tenures before bankruptcy may cling to outdated paradigms and resist necessary radical changes, which hinders significant reforms. Additionally, Malmendier and Tate (2009) suggest that managers who have built 'superstar' reputations may prioritize activities that enhance their public image over those that genuinely increase firm value. Financial stakeholders, such as banks and creditors, often condition their continued support on their confidence in the management team's capacity to solve problems. A change in top management signals to stakeholders that proactive measures are being taken to improve performance (Slatter, 1984).

A distressed firm may benefit from appointing a new manager who can restore credibility and encourage stakeholders to maintain their relationships despite recent performance declines (Ellis, 2012). For example, Wild (2010) found that eight out of ten strategic turnarounds involved new leadership, while Thain and Goldthorpe (1989) reported that 19 out of 27 successful turnarounds required a change in management. Introducing fresh executives during a turnaround is recognized as a recovery catalyst, as they provide specific knowledge, capabilities, or alternative viewpoints (Grinyer & McKiernan, 1990; Tourtellot, 2004).

However, despite the focus on management restructuring, a strand of research warns that changes in the CEO or top management team can lead to significant internal disruption. New reporting relationships can create stress among employees who are concerned about their job security and status. This shift may also weaken informal communication channels, leading to increased ambiguity and instability within the firm (Castrogiovanni et al., 1992; Kesner & Dalton, 1994).

2.2.2. Liquidity Generation

Mbugua and Makori (2014) emphasize that the success of a turnaround strategy hinges on the availability and affordability of capital, which are essential for driving growth and profitability. Therefore, protecting a company's liquidity should be the top priority during a cash flow crisis. Ensuring sufficient cash flow and access to capital is vital to prevent insolvency and maintain a buffer for future investments to remain competitive. To adapt to evolving demand and supply dynamics, companies should adjust their pricing strategies and concentrate on the most profitable markets, while deprioritizing or exiting low-margin sectors to simplify operations and enhance profitability.

To address shortages and improve cash flow, companies should focus on various levers, including revenue, cost of goods sold, selling, general and administrative expenses, research and development (R&D), inventory management, receivables, payables, capital expenditures, and financing. These elements should be managed in a mutually exclusive and collectively exhaustive manner (Nordenström & Ekberg, 2020).

Regarding financing, there are two primary sources: internal and external. Internal sources include asset divestiture and equity issuance, which are commonly used to alleviate financial distress, pay off debt, reduce interest costs, and enhance cash flows (Primawan et al., 2024; Slatter, 1984). In contrast, external sources encompass both secured and unsecured creditors. As companies navigate restructuring or recapitalization efforts, it is crucial to maintain ongoing support from stakeholders and financiers to extend financial stability (Deloitte, 2021).

In both scenarios, the ability to raise capital is determined by two key factors: the company's operating performance and the level of asset encumbrance. These factors influence the company's capacity to secure funding from internal or external sources. For example, if all assets are pledged as collateral to secured lenders and utilized to their maximum potential, raising cash through asset sales or issuing new debt becomes extremely challenging. Similarly, poor operating performance will negatively impact both debt and equity holders (Onich, 2012).

2.2.3. Core Operation Identification

A focus on a firm's core activities is a commonly highlighted turnaround strategy in the literature, often implemented alongside cost-cutting and asset retrenchment (Abdillah et al., 2024; Boyne & Meier, 2009; Rivera-Prieto et al., 2022; Tasya & Alvia, 2024). Successfully reestablishing a business in the market often relies on concentrating efforts on its core operations (Gotteiner et al., 2019; Kraus et al., 2013). While turning around a company without a foundation for generating positive cash flow is challenging, there have been rare instances of success through this approach (Onich, 2012).

Hambrick and Schecter (1983) recommend prioritizing historically successful products to aid turnaround efforts. This strategy enhances customer understanding, expands marketing channels, and optimizes after-sales services (Grinyer & McKiernan, 1990). Additionally, Arogyaswamy et al. (1995) identify two scenarios for implementing this strategy: in cases of temporary economic downturns, it is advisable to serve customers who value the company's resources and capabilities, while during severe downturns, focusing on the remaining viable customers is more appropriate.

2.2.4. Fast Decision Making

Decisive leadership, swift and high-quality decision-making, and quick execution are essential for any successful turnaround (McKinsey, 2023; Shepherd et al., 2023; Sinnaiah et al., 2023). Time is more valuable than money; while money can be recovered, lost time cannot. It is crucial to create a sense of urgency within the organization, as transformation programs require close collaboration among numerous individuals and departments. The necessary changes cannot be implemented without the drive and commitment of the entire organization. Research shows that over 50 percent of struggling companies fail to establish this sense of urgency, often because executives overestimate their effectiveness in generating it (Nordenström & Ekberg, 2020).

During a crisis, businesses frequently perform faster and better than they thought possible just months earlier. Sustaining this sense of possibility can become a lasting source of competitive advantage (Sneader & Sternfels, 2020). Organizational speed is critical for navigating a successful recovery (Nordenström & Ekberg, 2020; Weiss & Wruck, 1998). In an era of rapid technological and competitive change, quick strategic decision-making is vital, as traditional practices of extensive strategic planning may no longer guarantee success (Eisenhardt, 1990). For example, negotiations with various stakeholders—such as banks, customers, suppliers, and tax authorities—can distract management and potentially harm the business. Consequently, the ability to swiftly address and resolve these issues is paramount for ensuring successful turnarounds.

2.2.5. Use of Professional Consultants

Mitter and Mayr (2013) emphasize that consultants and remediation managers can leverage their understanding of the resources needed for sustainable remediation. In certain situations, shortcomings can be addressed during the planning and implementation stages of renovation. For instance, consultants can aid in executing marketing strategies or forging essential network connections. Additionally, seeking external counsel is vital when making rapid strategic decisions (Eisenhardt, 1990). While involving outside parties may initially seem counterproductive due to their limited insight into specific challenges, their participation allows the company to extend its operational boundaries, which is crucial during times of transformation (Nordenström & Ekberg, 2020). Research has shown that CEOs or turnaround professionals who successfully lead transformations often possess external functional backgrounds, such as in law, finance, or general administration (Baird, 2014). These leaders typically bring a 'fresh eye', helping to identify issues that the current management team may have missed.

While it is important to recognize the significance of these success factors, a critical assessment of the dynamics surrounding managerial change is essential (Kowalzick et al., 2024). The literature often portrays a positive view of new executives offering fresh perspectives. However, it is equally important to consider potential challenges, such as resistance to change and the time required for new strategies to take effect. A thorough examination of the limitations and possible drawbacks of managerial change can provide a more nuanced understanding of its impact on turnaround success.

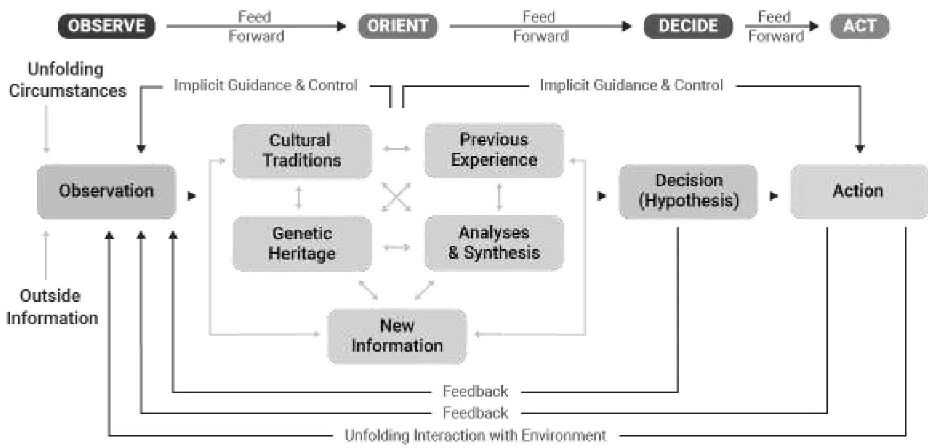
2.3. Process of Turnaround Management

Driven by urgency, leaders are increasingly adopting agile methods, such as quickly convening videoconferences to solve problems and granting remote teams greater decision-making authority. However, it is crucial for cross-functional teams to maintain a long-term perspective and avoid panic reactions (Sneader & Sternfels, 2020). In a turnaround situation, several key factors come into play. Time, often alongside financial resources, emerges as a significant constraint. The timeframe for thoroughly evaluating problems and executing necessary changes is typically quite limited. Consequently, efficient time utilization becomes critical in addressing challenges and implementing required transformations. In this context, Kish (2017) affirms that agility is essential for the success of any turnaround.

Agility involves acting quickly based on rapid decisions in a constantly changing environment. One relevant agile decision-making model for effective turnarounds is the observe-orient-decide-act (OODA) loop. This innovative process was introduced by John Boyd, a renowned military strategist in the US Air Force. The OODA loop consists of four distinct stages. The first stage, observing, entails detecting enemy aircraft. The second stage, orienting, involves positioning the aircraft toward the enemy to establish a favorable vantage point for the next stage. The third stage, deciding, is about making informed choices regarding the next course of action. Finally, the fourth stage, acting, encompasses implementing the chosen decision, such as engaging the enemy.

Central to this loop is the concept of agility, which emphasizes the ability to swiftly adapt and maneuver, enabling the OODA loop to be executed at an accelerated pace (Enck, 2012). The application of the OODA loop is increasingly being integrated into the business realm. Insights derived from data collection contribute to generating hypotheses, leading to a process of convergence that ultimately allows for swift action based on the decision made (see Figure 1). This incorporation of the OODA loop into business practices underscores the importance of adaptability and agile decision-making to capitalize on emerging opportunities (Vettorello et al., 2019).

Figure 1: OODA loop



Source: Feloni and Pelisson (2017).

2.3.1. Observe

The initial phase of turnaround management typically lasts about a month, during which the primary objective is to gain a comprehensive understanding of the situation (Scherrer, 2003). This phase involves observing and analyzing the underlying causes of the company's decline. Thoroughly examining and comprehending the various factors contributing to this decline is crucial for the success of the turnaround process (McGovern, 2007). Researchers have identified strategic and operational causes of decline, such as increased competition, reduced profit margins, supply chain management challenges, economic recessions, labor strikes, and excess production capacity.

Understanding these causes is essential for determining the appropriate turnaround strategies and actions to implement (Edokpa et al., 2023). Subsequently, strategic responses may include vertical integration, diversification, and changes in top management, while operational responses might involve significant plant investments, a focus on key functional areas, and improvements in efficiency ratios to address the identified issues (Schendel et al., 1976).

Additionally, financial analysis is highlighted as one of the first steps toward achieving a successful turnaround (Yawson, 2005). Reviewing the company's financial strategies, particularly the profit and loss (P&L) statement, can provide immediate solutions to prevent further performance deterioration (Walker, 2021). Understanding financial exposure is critical; management must establish common operational assumptions, including decisions on target markets, product and service offerings, and key technology platforms. Without a clear and shared vision for the future, it becomes impossible to agree on necessary actions or fully grasp the extent of change required to meet established objectives (Nordenström & Ekberg, 2020).

Market analysis is another vital component of the observation phase. Identifying opportunities and threats that could influence the success of the turnaround plan is essential. The plan can be executed effectively by leveraging opportunities, such as exploring new product lines or expanding into new markets, while mitigating threats through measures like renegotiating agreements with banks (El Sayed, 2015).

2.3.2. Orient

In the OODA loop, the orientation step holds paramount significance. This critical stage involves mental models that influence the entire functioning of the OODA loop. Orientation shapes our perception and interaction with the environment, impacting our observations, decisions, and subsequent actions. It forms the foundation of the OODA loop process, defining how we understand and respond to the ever-changing dynamics of our surroundings (Kish, 2017).

In a business context, a company’s culture and the ability to decode human behavior are the dominant forces shaping the orientation step. A well-crafted orientation can eliminate the need for a formal decision step by providing implicit guidance and control. By fostering a strong company culture and understanding human behavior, decision-making becomes more intuitive and effective, minimizing the necessity for explicit and time-consuming decisions during a turnaround. Leaders are tasked with designing organizational transformations in areas such as systems, culture, or operational activities (Evans et al., 2013). A successful turnaround strategy requires leaders to establish a positive communication culture to build organizational trust (Boyd, 2011; Lawson & Price, 2003). Lawson and Price (2003) also emphasize that the transformation must be clearly defined and communicated throughout the organization.

Designing the company culture is crucial during this step. Language and rituals significantly shape culture. A shared language fosters cultural unity among workers, particularly in remote work settings. Rituals, being universal aspects of human existence, can create a sense of cohesion and rhythm within an organization (Sutherland & Sutherland, 2014). Decoding human behavior is another vital aspect of the orientation step. High emotional intelligence is essential for understanding employees' motivations, adaptability, and learning capacities. Tools such as the Predictive Index (PI) behavioral assessment can help identify behavioral needs and select the right individuals to lead the turnaround process (Kish, 2017).

While a strong company culture is emphasized in the orientation step, it is important to critically assess the potential drawbacks and challenges associated with shaping and changing organizational culture. The literature often highlights the benefits, but a thorough examination of the limitations, potential resistance, and time required for cultural change is essential for a comprehensive understanding of its impact on the turnaround process.

2.3.3. Decide

In the deciding phase, strategies and action plans are formulated based on previous observations and analyses. During the initial stages of the turnaround process, short-term strategies such as cost-cutting, downsizing, layoffs, and revenue optimization are frequently prioritized (Moog et al., 2013; Morrow et al., 2007; Rico & Puig, 2021; Zimmerman, 2002). These actions aim to mitigate decline, enhance efficiency, and generate cash flow to stabilize the company’s financial position.

Once the decline has been arrested and profitability is reestablished, long-term strategies become essential (Filatotchev et al., 2006). After implementing short-term measures, the next critical step is to pursue cautious and well-considered growth. During the recovery phase, the firm must devise growth strategies that leverage its strengthened core activities to ensure sustainable long-term development (Schoenberg et al., 2013). These strategies focus on enhancing the firm's competitive advantages and ensuring sustainability. Long-term strategies may involve entrepreneurial-driven asset reconfiguration, utilizing existing resources to expand product offerings or enter new markets (Robbins & Pearce, 1994; Sudarsanam & Lai, 2001).

'Offensive' market-based strategies, such as launching new products, adjusting the product mix, and increasing prices, are often viewed as more effective than defensive strategies. Abebe (2010) argues that these offensive strategies challenge the misconception that retrenchment underpins a successful recovery strategy. Moreover, hybrid or outpacing strategies that combine cost and differentiation advantages have gained prominence in today's competitive environment (Piller & Schoder, 1999). These strategies aim to deliver high-quality products and services while remaining price-competitive. Successful implementation of these strategies is crucial, with effective project management being a vital element of execution.

2.3.4. Act

The strategies developed in the previous phase are put into action during the act phase, transforming plans into tangible results. It is essential to measure capabilities to ensure that the organization's structure, culture, and skills align with its strategic goals. Consistent oversight, adaptation, strong leadership, and clear communication throughout the execution process are crucial for successful implementation (Neilson et al., 2008). Maintaining structure, discipline, and dedication throughout this process is also vital. Therefore, a comprehensive implementation plan, effective governance, and continuous monitoring of the change's success are necessary (Nordenström & Ekberg, 2020).

Tools like line-of-sight can help identify gaps in strategy execution capabilities and offer insights for improvement (Kish, 2017). Effectively managing change in complex situations and establishing clear metrics for effectiveness are critical factors for successful strategy implementation (Kazmi, 2008).

3. Research Methodology

3.1. Research Design

This study adopts a qualitative and phenomenological approach to explore the experiences of frontline managers in turnaround management through semi-structured interviews. Phenomenology is grounded in the works of philosophers such as Husserl and Merleau-Ponty (Sadala &

Adorno, 2002). The research process involves several key steps: (i) bracketing, where we set aside our preconceptions and biases to engage with participants' experiences without distortion; (ii) intuiting, where we employ intuitive analysis to uncover the essence of these experiences and understand their underlying meanings; (iii) identifying essences, which entails pinpointing essential themes and structures within the data to capture the core aspects of turnaround management experiences; and (iv) comparative analysis, where we compare our findings with existing literature to validate consistencies or contradictions and deepen our understanding of the explored phenomenological aspects.

The qualitative research approach aids in understanding the complexities surrounding successful turnarounds, providing insights into strategies, leadership styles, and organizational dynamics. This method enables a thorough exploration of business turnaround, leadership styles, turnaround strategies, and methodologies. It is valuable to the study as it allows us to gain meaningful insights into the factors contributing to business turnarounds through an in-depth exploration of the topic.

Data was collected from October 2022 to May 2023 from turnaround managers using semi-structured interviews. The aim of this study is to identify the variables driving business turnaround performance by observing a sample of high performers. The intention is to use these observations to inform decisions and theories that can be applied to the broader business environment. Given this goal, the study follows an inductive approach.

3.2. Research Question and Objectives

We ask two main questions: (i) ‘what are the key factors that contribute to the success of a turnaround?’ and (ii) ‘can these factors be organized into a framework?’. The research is thus guided by two main objectives: (i) to gather insights from experienced turnaround managers regarding the factors that contribute to success, and (ii) to identify a framework that can be applied during turnaround efforts to ensure successful outcomes. By addressing these research questions and achieving these objectives, the study aims to expand existing knowledge in turnaround management and offer practical recommendations.

3.3. Study Sample

The sample consists of ten experienced turnaround managers and consultants from various industries, including transportation, information technology, manufacturing, cosmetics, and wholesale. This diversity ensures the creation of a generic framework applicable across different sectors. All participants have served as CEOs or interim CEOs during turnaround processes. Purposive sampling was employed to select individuals who met specific inclusion criteria, such as having at least five years of experience in turnaround management and a willingness to participate. Due to non-disclosure agreements, the participants chose to remain anonymous regarding their identities and the companies they have turned around. Table 1 presents information about the respondents in the study.

Table 1: Participants' Profile and Interview Description

Participant	Expertise	Industries	Turnaround projects	Details shared	Duration (mins)
P1	Complex operations management, growth, acquisition, restructuring, turnaround	Maritime transport	Turnaround of a struggling maritime transport company	Experiences of the maritime company turnaround	55
P2	Turnaround, crisis management, transformation, transition management	Railway transport, cable manufacturing, software development	Turnaround in three companies	Discussed varied turnaround experiences in different sectors	67
P3	Turnaround management	General	General turnaround experience	Shared a broad overview of turnaround management	44
P4	Restructuring, transformation, turnaround, Managing Director, CFO	Telecom	15-month mission to turn around a struggling telecom company	Experiences about the telecom company turnaround	53
P5	Shareholder change, mergers and acquisitions, turnaround, restructuring, crisis, project management	Manufacturing	18-month factory turnaround	Experiences with the factory turnaround	54
P6	Operational turnarounds, restructurings in manufacturing	Agri-food, engraving	Two turnaround projects	Shared experiences in two manufacturing turnarounds	52

Participant	Expertise	Industries	Turnaround projects	Details shared	Duration (mins)
P7	Turnaround, international growth acceleration, transformation	General	General turnaround experience	Provided general insights on turnaround management	46
P8	Transition management, turnaround management	Consulting, cosmetics	Two turnaround projects	Focused on turnarounds in consulting and cosmetics industries	58
P9	Crisis and transition management, B2B SMEs	Chemical products	Turnaround of a chemical products company	Discussed chemical company turnaround in detail	52
P10	Business turnaround, change management, transformation	Beverage, marketing, wholesale	Turnaround in three companies	Shared experiences across three distinct sectors	64

3.4. *Data Collection Method and Interview Protocol*

The data collection involved conducting semi-structured interviews with ten participants, utilizing open-ended questions to encourage a free-flowing conversation. Prior to the interviews, questions and themes were shared with participants, enabling them to prepare while still promoting spontaneity during the discussions. Providing the questions in advance allowed participants to organize their thoughts and prepare as needed. The interview protocol was meticulously designed to elicit detailed responses and gather data in a structured manner by asking the following questions:

- What is the turnaround process you follow?
- What are the actions taken in each step?
- What are the challenges faced?
- What is the leadership approach used?
- Are there any project management methodologies used?
- What are the key success factors of a turnaround?

Before the interviews, the interview protocol was pilot-tested to ensure its clarity and effectiveness. This process involved using follow-up questions for clarification and elaboration as needed. The interviews were then conducted in a quiet and private setting, using phone calls and video conferencing, and were recorded with the participants' consent. Some participants opted for anonymity because of the non-disclosure agreements they had signed.

3.5. Data Analysis

The data analysis process follows a phenomenological approach, incorporating specific principles and steps to derive meaningful insights from the collected data. This study employs a two-step analytical method.

In the first step, which involves phenomenological reduction and thematic analysis, data from semi-structured interviews undergoes phenomenological reduction. The aim is to identify and explore common perceptions, understandings, processes, and thought patterns among participants. By carefully examining the raw data, we sought to distill essential themes that reflect the lived experiences of frontline managers in turnaround situations.

In the second step, a comparative analysis is conducted by comparing the interview findings with existing literature on turnaround management. This approach confirms similarities or identifies contradictions, thereby contributing to a deeper understanding of the phenomenological aspects revealed during the interviews. By situating our findings within the broader context of existing knowledge, we aim to extract valuable insights from the lived experiences of turnaround managers.

4. Findings and Discussion

4.1. Success Factors

The results of the data analysis on success factors are presented in Table 2, revealing intriguing insights into the frequency with which interviewees mentioned these factors. Notably, the most frequently cited success factor is the use of professional consultants, mentioned in five out of the ten interviews conducted. This finding aligns with previous literature that underscores the value of external consultants in facilitating successful turnarounds (Mitter & Mayr, 2013; Nordenström & Ekberg, 2020).

Table 2: Alignment of success factors in interview data and literature review

Success factors	**Case 1**	**Case 2**	**Case 3**	**Case 4**	**Case 5**
Managerial change	√				
Liquidity generation	√		√		
Core operation identification					
Fast decision making	√			√	
Use of professional consultants	√	√		√	
Management experience			√		√
Success factors	**Case 6**	**Case 7**	**Case 8**	**Case 9**	**Case 10**
Managerial change				√	√
Liquidity generation		√			√
Core operation identification					√
Fast decision making		√			
Use of professional consultants	√	√			
Management experience	√				

Participants noted:

> Bringing in external consultants allowed us to see the challenges from a fresh perspective and quickly implement necessary changes. [P2]
>
> The expertise of consultants provided us with valuable strategies that we might not have considered otherwise. [P4]

Following closely, the second most prominent success factor is liquidity generation, mentioned in four interviews, which is consistent with its importance highlighted in prior studies (for example, Mbugua & Makori, 2014; Primawan et al., 2024). One participant emphasized:

> Organizations should scrutinize and reduce costs by challenging non-essential expenses, renegotiating with suppliers, and minimizing costs without compromising revenue. R&D strategies must prioritize core projects and optimize costs, while capital expenditure should focus on maximizing returns from existing investments and limiting non-essential spending until cash flow stabilizes. [P3]

Furthermore, another participant stressed the critical nature of liquidity generation during the turnaround period:

> Without the ability to generate liquidity, we would have struggled to invest in key areas that facilitated our turnaround. It was a lifeline during a challenging period. [P1]

Additionally, managerial change, fast decision-making, and management experience each shared the third position, appearing three times. This observation aligns with existing literature, which emphasizes the significance of managerial change (Thain & Goldthorpe, 1989; Wild, 2010), rapid decision-making (Shepherd et al., 2023; Sinnaiah et al., 2023), and prior experience in navigating financial downturns (Ellis, 2012). Participants shared insights such as:

> Our entire approach was transformed when we brought in new upper management. Their fresh perspective and emphasis on collaboration helped us adapt quickly to the challenges we faced. [P9]

> Acting swiftly and maintaining a sense of urgency is crucial. Even well-crafted strategies can become irrelevant if they take too long to develop. [P7]

> Our new COO had previously navigated a major financial crisis in another company. His insights were invaluable. [P5]

In contrast, core operation identification was mentioned in only one of the ten interviews. This focus involves identifying markets, products, and customers with profitability potential. The research indicates that successful business turnarounds often stem from concentrating on established product lines and fostering customer loyalty (Abdillah et al., 2024; Boyne & Meier, 2009; Rivera-Prieto et al., 2022; Tasya & Alvia, 2024). One participant noted:

> When identifying a viable core, several key factors must be considered: it should generate positive cash flow within six months, have sufficient sales to support the firm during problem-solving phases, possess modern competitive machinery and data systems, and be located in a competitive area. [P10]

Overall, these findings demonstrate a significant alignment between the success factors identified in the literature review and the perspectives shared by the interviewees, though with varying degrees of emphasis. The findings also highlight the importance of additional factors, such as prioritizing human capital and possessing strong analytical and leadership skills. Our results underscore the necessity of tailored solutions for each specific case to ensure a successful turnaround. One participant stated:

> In my experience, generic solutions just do not cut it. Each company has its unique challenges, and we found that crafting tailored strategies specific to our circumstances was the key. [P6]

This viewpoint, consistently echoed by several interviewees, challenges the reliance on predefined strategies for turnarounds, pointing out the potential risks and limitations of such an approach. Table 3 summarizes the frequency of the success factors mentioned by the interview participants.

Table 3: Frequency of success factors mentioned in interviews

Success factor	Frequency mentioned
Use of professional consultants	5
Liquidity generation	4
Managerial change	3
Fast decision making	3
Management experience	3
Core operation identification	1

4.2. *Strategies and Actions*

The results of the data analysis regarding strategies and actions are presented in Table 4, offering valuable insights into the approaches employed by turnaround managers. Notably, financial analysis and business downsizing were the most frequently utilized action, mentioned by 70 percent of the interviewees. These actions were taken to address the challenges faced by organizations undergoing turnarounds.

Table 4: Alignment of strategies and actions in interview data and literature review

Strategies and actions	Case 1	Case 2	Case 3	Case 4	Case 5
Financial analysis			√		√
Market analysis			√		√
Design the culture					
Cost cutting	√	√			√
Business downsizing	√	√	√	√	
Layoffs	√			√	√
Margin/revenue optimization					
Business model optimization	√	√		√	√
Long-term strategy			√		
Capabilities measurement					
Strategies and actions	**Case 6**	**Case 7**	**Case 8**	**Case 9**	**Case 10**
Financial analysis	√	√	√	√	√
Market analysis		√			

Strategies and actions	Case 1	Case 2	Case 3	Case 4	Case 5
Design the culture		√			
Cost cutting			√		
Business downsizing		√	√		√
Layoffs	√		√		
Margin/revenue optimization		√	√	√	√
Business model optimization	√				
Long-term strategy					√
Capabilities measurement					√

Participants noted:

> In our turnaround effort, financial analysis was indispensable. It allowed us to pinpoint inefficiencies and prioritize areas needing immediate attention. [P8]
>
> Downsizing was a tough but necessary choice. We realized that to stabilize the organization, we had to streamline operations and focus on our core strengths, which ultimately set us up for future growth. [P10]

Business model optimization and layoffs were mentioned by 50 percent of the interviewees, with participants arguing that clarity on the business model and retaining talent in key areas helped navigate the turnaround more effectively. They emphasized:

> Optimizing our business model was crucial. We had to rethink our value proposition and ensure that every aspect of our operations aligned with our long-term goals. [P6]
>
> While layoffs are always difficult, we had to make tough decisions to protect the organization's overall health. [P4]

Additionally, margin/revenue optimization appeared in 40 percent of the interviews, underscoring its importance in enhancing financial performance during turnaround efforts. One participant remarked:

> By closely analyzing our pricing strategies and cost structures, we significantly improved our financial performance, providing the stability we needed during the turnaround. [P9]

Market analysis was cited in 30 percent of the interviews, indicating its role in identifying growth opportunities and repositioning the organization within the market. Long-term strategies were mentioned in 20 percent of the interviews, emphasizing the need for a sustainable path forward. Finally, building culture and capabilities measurement were noted in only one interview each, suggesting potential areas for further exploration and focus. Participants highlighted:

> Conducting a thorough market analysis opened our eyes to new growth opportunities we had not considered. It allowed us to reposition our offerings and better meet the needs of our customers. [P5]
>
> While immediate actions were essential for our turnaround, developing long-term strategies was equally important. We needed a sustainable path that would stabilize us now and position us for future success. [P10]
>
> In our discussions, we recognized that building a strong organizational culture is crucial. It fosters collaboration and resilience, both of which are vital for navigating the challenges of a turnaround. [P7]

Overall, these findings reinforce the connection between insights gathered from the literature review and the experiences shared by the interviewees. The interviews provided real-world evidence of the effectiveness of the strategies and actions discussed in the literature and illuminated the different scales at which these strategies were applied across various turnaround scenarios. Consequently, these findings enhance our understanding of the diverse approaches taken by turnaround managers and highlight the importance of tailoring strategies to specific organizational contexts. Table 5 summarizes the frequency of strategies and actions emphasized by the interview participants.

Table 5: Frequency of strategies and actions employed by turnaround managers

Strategy/action	Frequency mentioned
Financial analysis	70%
Business downsizing	70%
Business model optimization	50%
Layoffs	50%
Margin/revenue optimization	40%
Market analysis	30%
Long-term strategies	20%
Building culture	10%
Capabilities measurement	10%

4.3. Turnaround Management

In the literature review section, we examine the OODA loop, an agile decision-making model considered effective for rapid decision-making during crises, such as organizational turnarounds (Kish, 2017). Interestingly, analysis of the interview data revealed that none of the participants explicitly employed any specific decision-making models or management methodologies. Only one individual mentioned using the lean management approach, which is not typically classified as an agile methodology. This participant stated:

> The lean methodology proved crucial during our turnaround. It allowed us to streamline processes, reduce costs, and develop a culture of continuous improvement, all of which were essential for our recovery efforts. [P2]

In contrast, most interviewees highlighted their reliance on personal experience and expertise to navigate turnaround situations. This raises questions about the necessity of project management methodologies in such contexts. Nonetheless, we identified a common theme among the managers: they adhered to a fundamental strategic management process that involved analysis, strategy development, and execution. Notably, this process closely resembles the OODA loop discussed earlier. A summary of the interview findings can be found in Table 6.

Table 6: Summary of findings

Category	Key findings
Success Factors	Most frequently cited: Use of professional consultants (5 mentions) Second: Liquidity generation (4 mentions) Managerial change, fast decision making, management experience (3 mentions each) Least mentioned: Core operation identification (1 mention)
Strategies and actions	Most utilized: Financial analysis, business downsizing (70% each) Business model optimization, layoffs (50% each) Margin/revenue optimization (40%) Market analysis (30%) Long-term strategies (20%) Least utilized: Building culture, capabilities measurement (10% each)
Turnaround management	No explicit use of decision-making models or management methodologies; reliance on experience and expertise (only one interviewee mentioned the use of lean management methodology). Fundamental strategic management process

5. Recommendations

5.1. Proposed Framework

Based on the insights gathered, we propose a strategic turnaround management framework that integrates the key success factors and actions identified in the literature review and interview findings. This framework aims to provide a structured approach for organizations facing turnaround situations.

5.1.1. Analysis and Diagnosis

This step involves a thorough analysis of the organization's financial health, market position, and internal capabilities. It includes identifying the root causes of the crisis and assessing the extent of the challenges faced. Gathering insights from both internal stakeholders and external experts is essential for a comprehensive understanding of the situation.

5.1.2. Define Tailored Strategies

This step focuses on developing tailored strategies that align with the organization's specific needs and challenges. Consideration may be given to engaging professional consultants for specialized expertise and support in strategy formulation. Key areas for improvement, such as liquidity generation, business downsizing, and margin/revenue optimization, should be prioritized based on the analysis conducted.

5.1.3. Execution and Action

The defined strategies should be implemented through a series of focused and prioritized actions. Regular monitoring of progress is necessary to ensure that initiatives remain on track and achieve desired outcomes. Data and analytics should be utilized throughout this process to guide decision-making and measure the effectiveness of the actions taken.

5.1.4. Leadership and Change Management

Strong leadership is essential to drive turnaround efforts and inspire commitment from employees. If necessary, managerial changes should be made to align with the new strategic direction. Open and transparent communication with stakeholders will ensure clarity of purpose and foster a shared vision throughout the turnaround process.

5.1.5. *Agile Decision Making*

Embracing an agile decision-making approach, such as the OODA loop, is crucial for enabling rapid and effective decision-making during the turnaround process. Strategies must be continuously assessed and adapted in response to changing circumstances and emerging opportunities. Managers should be empowered to make timely decisions, fostering a culture of experimentation and learning within the organization. Figure 2 summarizes the proposed strategic turnaround management framework.

Figure 2: Strategic turnaround management framework

6. Conclusion

This paper has explored the essential elements for achieving successful turnarounds within organizations. Utilizing a comprehensive methodology that includes an extensive literature review and in-depth interviews with experienced turnaround managers, this research has uncovered valuable insights into the factors that contribute to turnaround success. The analysis of interview data revealed several significant findings. Interviewees frequently highlighted key success factors such as the strategic use of professional consultants, liquidity generation, managerial change, rapid decision-making, and effective utilization of management experience. These factors emphasize the critical roles of expert guidance, financial stability, effective leadership, and prompt decision-making processes in facilitating successful turnarounds.

Interestingly, the interviews also underscored the importance of customizing strategies to fit the unique circumstances of each turnaround situation. While some interviewees relied on their experience and expertise rather than adhering to specific management methodologies, a common thread emerged: the adoption of a fundamental strategic management process that involves analysis, decision-making, and action. This aligns with the agile decision-making model, known as the OODA loop, discussed in the literature review. These findings validate and extend insights gathered from the literature, demonstrating a convergence between theoretical perspectives and the practical experiences of turnaround managers. They provide a nuanced understanding of success factors in turnarounds, highlighting the critical need for adaptability, strategic analysis, and timely decision-making.

Consequently, this research significantly contributes to the existing body of knowledge by offering empirical evidence and practitioner insights into the success factors of turnarounds. The identified factors can serve as practical guidelines for organizations undertaking turnaround initiatives, enabling them to adopt informed strategies and enhance the likelihood of successful outcomes.

However, future research is necessary to build on the results of this study. For instance, it would be beneficial to conduct more nuanced inquiries into the specific contexts and industries where these success factors may vary in significance. This could involve a focused exploration of the interplay of these factors in different organizational settings, taking into account factors such as size, industry type, and regional nuances. Additionally, future studies could examine the intricate dynamics of cultural factors, organizational structures, and external environmental influences, aiming to unravel their complex impact on the success of turnaround efforts. Understanding how these variables interact within diverse organizational landscapes can provide practitioners and decision-makers with a more comprehensive and actionable understanding.

Furthermore, given the evolving landscape of technology and its impact on organizational dynamics, investigating the role of emerging technologies in facilitating or hindering turnaround success could be a valuable area of exploration. By pursuing these targeted research endeavors, we can refine our understanding of contextual variations in success factors and tailor strategic recommendations more precisely. Such insights would contribute to academic discourse and offer practical guidance for organizations navigating the complexities of strategic turnaround management.

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The Impact of Managerial Shareholding and Financial Constraints on Investment Decisions

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Abstract: *Agency conflicts arising from asymmetric information between insiders and outsiders affect company investment decisions in imperfect capital markets. This study examines the influence of managerial shareholding and financial constraints on investment choices. Utilizing panel data from 60 nonfinancial firms listed on the Pakistan Stock Exchange from 2011 to 2020, we employ the system GMM technique. Our findings indicate that both managerial shareholding and financial constraints significantly impact corporate investment decisions. Increased managerial ownership aligns incentives favorably, helping to mitigate agency problems and enhance the quality of investment projects. The reliance on internally generated funds for investments points to a high investment-to-cash-flow sensitivity, which reflects financial constraints. This study further investigates the factors influencing investment decisions in the manufacturing and energy/power sectors. Our results show that firms in the energy/power sectors are not financially constrained in their investments, while manufacturing firms exhibit a strong dependence on cash flows, indicating higher investment cash flow sensitivities.*

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The Impact of Managerial Shareholding and Financial Constraints on Investment Decisions

1. Introduction

One of the primary objectives of firms is to utilize the most cost-effective sources of finance for investment purposes. According to the pecking order theory, companies initially rely on internal resources before resorting to more expensive external financing. In perfectly competitive markets, internal and external finances are considered substitutes, with firms incurring no additional costs when obtaining external funds. However, the reality is quite different (Vijayakumaran, 2021).

Jensen and Meckling (1976) argue that agency conflicts significantly influence corporate investment decisions. The agency problem arises from the conflict of interest between shareholders, who aim to maximize their wealth by investing in value-enhancing projects, and managers, who seek to enhance their own power and status by leading a well-regarded organization. Managers, possessing direct access to a firm’s confidential data, hold an advantage over shareholders, who are typically dispersed and less capable of closely monitoring managerial actions

A diffused board of directors also makes it challenging for shareholders to oversee managers effectively. As a result, self-interested managers may be incentivized to utilize corporate resources to benefit their own interests rather than those of the shareholders. In such scenarios, the firms’ investment decisions are unlikely to yield optimal returns, as managers may over-invest in low-return projects or under-invest in high-return projects to fulfill their personal objectives (Checkley et al., 2014). However, by providing managers with equity ownership, firms can alleviate some of the issues stemming from agency conflicts. When the interests of managers and shareholders align, corporate investment decisions tend to be more efficient.

In addition to agency conflicts, market frictions such as information asymmetry can impede a firm's ability to invest in high-return projects. The information gap between insiders (managers) and outsiders (external shareholders) elevates the cost of raising capital through external financing. When the disparity in information between managers and investors is significant, the potential for moral hazard increases. Investors will typically demand a premium to protect their interests, which covers the risks associated with managerial moral hazard and adverse selection, thereby raising the cost of external capital. Firms facing information asymmetry often struggle to attract external financing, leading them to rely more heavily on internally generated funds. Consequently, their investments become increasingly sensitive to the availability of internal resources, and financial constraints may compel them to invest only in the most profitable projects (Campello et al., 2010; Driver & Muñoz-Bugarin, 2019).

This study investigates the influence of managerial shareholding and financial constraints on corporate investment decisions in Pakistan. Specifically, it focuses on the extent of managerial shareholding in nonfinancial firms listed on the Pakistan Stock Exchange (PSX) and explores its impact on these firms' investment choices. Additionally, we analyze the financial constraints that firms encounter in Pakistan and assess whether these constraints affect their investment activities. Given the significant information asymmetry and agency conflicts prevalent in Pakistani firms, it is crucial to understand the roles of managerial shareholding and financial constraints in shaping investment behaviors.

This study is pioneering in its approach, as most existing research in Pakistan primarily examines the effect of managerial ownership on financial performance. In contrast, we integrate both the direct and indirect impacts of managerial shareholding and financial constraints to evaluate their combined effect on investments in fixed capital among PSX listed firms. The findings of this study offer valuable insights for policymakers in developing reforms aimed at enhancing managerial shareholding, addressing agency problems, and improving firms' investment portfolios.

The organization of this study is as follows: Section 2 presents the theoretical framework and a review of the empirical literature. Section 3 outlines the methodology, while Section 4 discusses the results. Finally, Section 5 concludes the study.

2. Literature Review

2.1. Theoretical Framework

This study divides the theoretical framework into three main theories: (i) agency theory, (ii) pecking order theory, and (iii) Tobin's Q.

2.1.1. Agency Theory

Agency theory addresses the agency problem stemming from the separation between ownership and control. Shareholders, or principals, retain ownership, while managers, acting as agents, oversee the firm's internal operations. This dynamic creates a conflict of interest, leading managers to potentially divert corporate resources for personal gain. Not all managers are equipped to make tough decisions; those with poor governance often shy away from efforts to diversify the firm (Dong et al., 2021). A model by Aggarwal and Samwick (2006) demonstrates that the likelihood of underinvestment rises due to managerial complacency. Consequently, investment is positively related to managerial incentives, such as equity ownership, which encourages managers to act responsibly and make decisions that enhance the firm's value (Wu & Wu, 2021).

According to agency theory, conflicts between principals and agents can result in investment inefficiencies, including underinvestment and overinvestment (Jensen, 1986, 1993). Durnev and Kim (2005) further explain that when the goals of managers and shareholders align, particularly in countries with weak legal protections for investors, the positive outcomes of managerial shareholding are more pronounced.

To mitigate agency problems, corporate governance codes have been established to promote financial transparency and enhance shareholder wealth (Veldman & Willmott, 2020). For example, Okamoto (2024) finds that implementing a code of conduct with disclosure requirements for corporations successfully reduces the prevalence of cross-shareholdings in Japan. These measures have significantly improved corporate governance, compelling companies to justify their cross-shareholding practices under the corporate governance code (Veldman & Willmott, 2020).

2.1.2. Pecking Order Theory

The pecking order is important for firms and potential investors as it reflects a firm's financing preferences, which can offer insights into its performance and financial health. Myers and Majluf (1984) argue that the pecking order theory emphasizes the use of internal resources for financing business activities instead of relying on expensive external finance. According to this theory, a firm should first finance its investments with internal funds before turning to debt and equity financing. When a company primarily utilizes internal finance, it sends a positive signal about its strength to the public. Additionally, reliance on debt financing indicates that management is confident in the firm's ability to cover its monthly interest expenses.

Increasing managerial ownership can lead to more cost-effective investment decisions. As managerial shareholding rises, the goals of managers and shareholders become aligned, prompting managers to favor internal financing over costly external options. Generally, firms prefer internal finance as it is cheaper and less risky (Beynon-Davies et al., 2016). However, as firms depend more on internal finance, their investment sensitivity to cash flows increases, which can heighten financial constraints (Ali et al., 2024a). In a more recent study, Allini et al. (2024) find that highly stable firms are less likely to seek outside funding. When faced with a financial deficit, these firms prefer issuing equity over debt. Their findings support the pecking order theory by showing that high-yield firms adversely affect the capital mix.

2.1.3. Tobin's Q Theory

According to Tobin's Q theory, market performance can influence investment decisions (Blundell et al., 1992). Firms require financing to fund investment projects and can utilize either internal or external sources. Since internal finance is often insufficient, companies frequently rely on external financing to meet their investment needs. This external financing can take the form of long-term loans or issuing shares to raise equity. Shareholders invest in shares traded on the stock market with the goal of maximizing their returns through increased market value. Investors are more likely to buy shares when they anticipate a high return in the form of dividends.

Tobin's Q investment theory connects the stock market to investment through the Q ratio (Andrei et al., 2019). This is calculated by scaling the market value of equity against total assets. A high Q ratio suggests that firms are more likely to issue additional shares to raise funds for investment projects. When the Q ratio exceeds 1, firms are inclined to invest more in physical capital because, for every rupee spent on additional fixed assets, such as plant and equipment, they can sell their stock for Q rupees, yielding a return of Q – 1. This indicates that investing in physical capital is profitable as the value of the capital exceeds its acquisition cost; firms are motivated to increase their investments when Q is greater than 1. In this context, Tayeb et al. (2023) empirically demonstrate that Tobin's Q, as a proxy for firm performance, positively influences innovation activities in Chinese firms.

2.2. Empirical Literature Review

2.2.1. Factors Affecting Managerial Shareholding

The relationship between a firm's riskiness and managerial ownership is positively correlated. Stock price volatility serves as a measure of the risk a firm faces; firms exhibiting higher stock price volatility typically have higher levels of managerial shareholding. Demsetz and Lehn (1985) note that when firms encounter high risk, the potential for moral hazard among managers increases, leading them to potentially mislead uninformed parties to enhance their own rewards. To mitigate this issue, firms with higher risk should increase managerial shareholding to align the interests of managers and shareholders.

Larger firms often incur greater monitoring costs, which necessitate a higher level of managerial shareholding (Jensen & Meckling, 1976). Because these firms typically hire more experienced and well-trained managers, they are more likely to grant equity ownership to incentivize these managers to leverage their expertise and perform to their fullest potential.

Additionally, firms require lower levels of managerial shareholding when they efficiently allocate and manage funds for fixed assets (Shleifer & Vishny, 1997). In cases where fixed capital constitutes a significant portion of a company's inputs, managerial shareholding tends to be lower because the spending patterns in such firms are more transparent, reducing the potential for moral hazard. Conversely, as discretionary spending becomes more complex and less observable, the optimal level of managerial shareholding tends to increase. Firms with intricate and technical operations often have higher managerial ownership, as managers are more deeply involved in business activities; thus, providing equity ownership serves as a motivation for enhanced performance.

2.2.2. Effect of Managerial Shareholding on Firm Value, Performance and Financial Policies

As discussed above, managerial shareholding helps alleviate the principal-agent problem. When agency costs are reduced, the internal operations of a firm become smoother and more efficient, enhancing overall productivity. As a result, the profitability and value of the firm also increase. Increasing managerial shareholding has positive alignment effects (Anwar et al., 2024). When top management ownership rises, managers are less likely to deviate from the value-maximizing path, aligning their goals with those of outside investors. This interest alignment process lowers agency costs and mitigates conflicts of interest, ultimately leading to the maximization of firm value.

However, there is an ambiguous link between managerial shareholding and firm performance due to mixed findings in previous studies. For instance, while Jensen and Meckling (1976) argue that increased managerial ownership improves performance by reducing agency costs, Fama and Jensen (1983) and Stulz (1988) contend that the power of internal owners increases with higher managerial ownership, while the authority of external owners remains limited. Consequently, no new ideas or perspectives are introduced into the business, hindering efficiency and performance.

Morck et al. (1988) find that Tobin's Q and firm performance are positively related when managerial shareholding ranges between 0 percent and 5 percent. However, a negative association is discovered at higher levels of managerial shareholding, ranging from 5 percent to 25 percent. In this range, managerial shareholding adversely affects firm performance, as entrenched managers may deviate from enhancing firm performance and value without accountability to other investors. Prior studies have established an inverse relationship between leverage ratio and managerial shareholding (Jensen, 1986). When managers are given an equity stake in firms, they align their interests with those of shareholders and work toward achieving the same objectives.

Chiu et al. (2022) studied Taiwanese nonfinancial enterprises from 2005 to 2019 and argued that companies with managerial shareholding tend to overinvest after experiencing excess internal cash flow, which may adversely affect businesses with limited resources. According to Zhang (2022), financial constraints negatively impact ownership concentration when all other factors remain constant. In contrast, the likelihood of financial constraints is effectively reduced by an increase in ownership concentration. Therefore, a higher tendency for ownership concentration can improve a company's performance when fixed financial constraints exist.

2.2.3. Managerial Shareholding and Firm Investment

Jensen and Meckling (1976) argue that managerial shareholding positively aligns interests, prompting managers to weigh the costs and benefits of their decisions and to invest in more worthwhile projects. Agency theory posits that conflicts of interest between principals and agents can cause firms to stray from their optimal investment path, resulting in either underinvestment or overinvestment. Additionally, developing countries such as Pakistan face challenges such as poor law enforcement and weak investor protection. Aligning managers' objectives with those of shareholders could significantly enhance investment in these regions (Durnev & Kim, 2005). However, Davies et al. (2005) find no significant correlation between managerial shareholding and investment.

Previous studies indicate that increasing managerial shareholding may help mitigate issues related to underinvestment and overinvestment. Aggarwal and Samwick (2006) note that managerial sluggishness can lead firms to invest below their optimal levels. Moreover, firms experiencing free cash flow problems tend to confront higher agency conflicts and may over-invest. According to Jensen (1986), these conflicts stem from the distribution of free cash (Checkley et al., 2014). Ideally, efficient firms should distribute excess cash to shareholders. However, doing so reduces the funds directly available to managers. Consequently, managers often use this surplus cash to finance low or negative net present value (NPV) projects to retain control over these resources. Managers' primary objectives are closely tied to firm size; a larger firm size typically enhances their prestige and power. This dynamic motivates managers to pursue expansion even when the investment costs exceed the expected returns. Nevertheless, Jensen (1986) argues that granting share ownership to managers could mitigate overinvestment issues, as managers would then focus solely on projects with positive NPV, ultimately enhancing shareholder returns. Therefore, we propose the following hypothesis:

Hypothesis 1: Managerial shareholding has a positive impact on investment decisions.

2.2.4. Role of Financial Constraints in Firms' Investment Decisions

The primary objective of firms in funding investments is to identify the most cost-effective option. They can finance their investments through three main sources: internal finance, long-term loans or debt finance, and equity finance. According to the pecking order theory, firms typically prioritize internal funds like cash flows before resorting to more expensive external sources such as debt and equity financing (Myers & Majluf, 1984).

Fazzari et al. (1988) argue that internal and external financing sources are not perfect substitutes for funding investment projects. They contend that financial dynamics shape the investment function; insufficient internal funds and limited access to costly external finance hinder a firm's ability to invest in high-quality, efficient assets necessary for improving productivity and profitability. Vijayakumaran (2021) notes that firms facing significant information asymmetry and agency conflicts may struggle to secure external financing for high-quality projects. Consequently, when obtaining external finance becomes challenging due to high-risk premiums, firms increasingly rely on internal funds like cash flows for their investments. Naveed et al. (2020) conducted a study using quantitative data from individual investors actively trading on the PSX and found that both financial and nonfinancial information significantly influence investment decisions. Additionally, the mediating role of corporate reputation is crucial in these investment decisions.

Previous research has established investment to cash flow sensitivity as a measure of financial constraints. Firms facing significant constraints tend to exhibit high sensitivity to cash flows, largely because they rely heavily on internally generated funds for their investments. Small firms are particularly vulnerable, as issues arising from information asymmetry make it even more difficult for them to secure external financing (Beck & Maksimovic, 2002). Therefore, there is empirical evidence that investment to cash flow sensitivities reflect firms' financial constraints. In this context, we propose that in response to external financial constraints, firms may increasingly utilize their internal finances for investment purposes, suggesting that such constraints may positively influence investment decisions.

Hypothesis 2: Financial constraints have a positive impact on investment decisions.

2.2.5. Role of Managerial Shareholding and Financial Constraints in Investment Decisions

The ability of a firm to invest in high-quality projects is adversely affected by agency conflicts and asymmetric information. Agency problems are known to exacerbate the financial constraints experienced by firms. Vijayakumaran (2021) finds that increasing managerial shareholding can help resolve these conflicts and reduce financial restraints. Additionally, Jensen and Meckling (1976) suggest that external costs can be minimized by granting ownership to managers. This occurs because managers with shared ownership tend to internalize the costs and benefits of their choices, leading them to invest in more value-maximizing ventures (Ali et al., 2024b).

Managerial share ownership enables these individuals to raise external finance at a lower cost. This indicates that higher ownership levels reflect managerial competence and a commitment to mitigating the expropriation of investors' funds. Consequently, lenders are more likely to provide external financing at lower interest rates. Vijayakumaran (2021) also argues that managerial shareholding indirectly influences investment decisions. Managerial shareholding creates a positive incentive alignment effect that alleviates agency conflicts and streamlines the firm's operations. As managerial ownership increases, information asymmetry decreases, thereby reducing the financial constraints faced by firms (Ruan & Zhang, 2012).

Anderson et al. (2006) argue that firms with higher managerial ownership are better positioned to raise external finance for investment activities due to facing lower financial constraints, establishing a negative relationship between financial constraints and managerial ownership. Pawlina and Renneboog (2005) report that granting share ownership reduces the propensity to invest in low-return ventures for 'empire-building.' Firms with high managerial shareholding are less likely to misuse investors' funds and use corporate resources to enhance their own benefits (Ali et al., 2024c; Wahid & Mumtaz, 2018). Given the interrelationships between managerial ownership and financial constraints, we examine how their combined effect influences investment outcomes. To test the interaction effect between managerial shareholding and financial constraints on investment decisions, we hypothesize the following:

Hypothesis 3: The combined effect of managerial shareholding and financial constraints positively impacts investment decisions.

3. Research Methodology

This study utilizes panel data from 60 nonfinancial firms listed on the PSX, covering the period from 2011 to 2020. The data was collected from the firms' annual reports. They were chosen for their active participation in the stock market, making them ideal for examining the effects of financial constraints and managerial shareholding on investment decisions. Analyzing these firms over a ten-year period allows for a deeper understanding of the factors influencing their investment choices. Significant results from the Durbin-Wu-Hausman and Breusch-Pagan tests indicate that our model is affected by endogeneity and heteroscedasticity.[1] Additionally, the Hausman test confirms the presence of endogeneity by rejecting the null hypothesis. Consequently, this study employs the generalized method of moments (GMM) to estimate the dynamic panel data model.

The GMM estimation techhnique, developed by Arellano and Bond (1991) and Blundell and Bond (1998), is suitable for endogenous dynamic panel models. In addition to addressing endogeneity and heteroskedasticity, the structure of our dataset supports the use of GMM, which effectively eliminates these issues while controlling for unobserved heterogeneity (Hasan et al., 2024). We opt for system GMM over difference GMM as it typically yields more efficient results in cases involving a large sample of firms observed over a short timeframe (Mairesse & Hall, 1996). The structural model is expressed as follows:

$$\left(\frac{I_{i,t}}{A_{i,t-1}}\right) = \beta_0 + \beta_1\left(\frac{I_{i,t-1}}{A_{i,t-2}}\right) + \beta_2\left(\frac{I_{i,t-1}}{A_{i,t-2}}\right)^2 + \beta_3\left(\frac{CF_{i,t-1}}{A_{i,t-1}}\right) + \beta_4 MS_{i,t-1} + \beta_5\left(\frac{CF_{i,t-1}}{A_{i,t-1}} \times MS_{i,t-1}\right) + \beta_6 SG_{i,t-1} + \beta_7\left(\frac{D_{i,t}}{A_{i,t-1}}\right) + \beta_8\left(\frac{WC_{i,t-1}}{A_{i,t-1}}\right) + \beta_9 SIZE_{i,t-1} + \beta_{10} EFD_{i,t-1} + \beta_{11}\left(\frac{D_{i,t}}{A_{i,t-1}} * SIZE_{i,t-1}\right) + \varepsilon_{i,t} \tag{1}$$

$\left(\frac{I_{i,t}}{A_{i,t-1}}\right)$	A proxy of the rate of investment. $I_{i,t}$ = net fixed assets + depreciation representing investment. A refers to total assets.
$\left(\frac{CF_{i,t-1}}{A_{i,t-1}}\right)$	This represents investment cash flow sensitivity and is used to indicate financial constraints. CF refers to cash flow representing internal funds, which combines net profit and depreciation.
$MS_{i,t-1}$	$MS_{i,t-1}$ shows managerial shareholding and is measured by the proportion of shares owned by directors and officers.
$SG_{i,t-1}$	A proxy for annual sales growth rate.
$\left(\frac{D_{i,t}}{A_{i,t-1}}\right)$	This denotes the leverage ratio. It is measured by dividing total debt by total assets.

[1] The p-value of the Durbin-Wu-Hausman test is 0.00. Therefore, we reject the null hypothesis and conclude that the model suffers from endogeneity. The results of the Breusch-Pagan test (p value = 0.00) and White test (p value = 0.00) show the presence of heteroscedasticity. Thus, we use the GMM estimation technique in this study.

$\left(\frac{WC_{i,t-1}}{A_{i,t-1}}\right)$	This represents working capital as a proportion of total assets.
$EFD_{i,t-1}$	A dummy variable represents equity financing, which takes a value of 1 if the company has issued shares and 0 otherwise.
$SIZE_{i,t-1}$	A dummy variable representing firm size is classified based on the median value of total assets. A value greater than the median represents large firms equal to 1 and 0 otherwise.

This study incorporates several control variables previously identified as influential on investment decisions. Specifically, we consider sales growth, leverage, working capital, equity financing, and firm size. Consistent with earlier research (see, for example, Fianto et al., 2018; Shefer & Frenkel, 2005), equity financing and firm size are treated as dichotomous variables. By focusing on prominent firms listed on the PSX, we categorize equity financing and firm size as dummy variables to clearly distinguish between firms based on these characteristics.

Additionally, we analyze the impact of Tobin's Q on firms' investment level. Tobin's Q serves as an indicator of a firm's investment prospects, reflecting its performance relative to the market value of equity. When the market value exceeds the recorded assets, Tobin's Q exceeds 1. Firms with a high Tobin's Q are incentivized to increase investments in fixed assets as these assets are deemed more valuable than their purchase prices. An increase in the market value of equity signifies greater confidence in firms, thereby expanding their investment opportunities.

$$\left(\frac{I_{i,t}}{A_{i,t-1}}\right) = \beta_0 + \beta_1\left(\frac{I_{i,t-1}}{A_{i,t-2}}\right) + \beta_2\left(\frac{CF_{i,t-1}}{A_{i,t-1}}\right) + \beta_3 MS + \beta_4\left(\frac{CF_{i,t-1}}{A_{i,t-1}} \times MS_{i,t-1}\right) + \beta_6 TQ_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where $TQ_{i,t-1}$ is measured by scaling the sum of the market value of equity and long-term debt by total assets.

4. Results and Discussion

4.1. Summary Statistics

Table 1 gives the summary statistics of the variables used. Our sample's maximum investment rate is 96 percent, while the minimum rate is as low as 1 percent. The average investment rate represented by $(I_{i,t}/A_{i,t-1})$ is 44 percent in Pakistan, with a standard deviation of 23 percent. The mean cash-flow-to-total-assets ratio (representing financial constraints) ($CF_{i,t-1}/A_{i,t-1}$) is 10 percent, with a standard deviation of 9 percent. The average percentage of managerial shareholding ($MS_{i,t-1}$) is reported to be 16 percent, while its standard deviation is 22 percent, confirming the significant presence of managerial ownership in firms listed on the PSX. Our sample shows that the maximum level of managerial shareholding is 95 percent while the minimum value is zero.

On average, the annual sales growth rate ($SG_{i,t-1}$) is 13 percent, with a standard deviation of 33 percent, while the average Tobin's Q is reported to be 1.13, with a standard deviation of 1.15. These variables validate the presence of reasonable growth opportunities in Pakistan during the sample period. The average leverage ratio ($D_{i,t}/A_{i,t-1}$) is estimated to be 9 percent, with a standard deviation of 13 percent, indicating the low dependency of Pakistani firms on long-term loans to finance assets and investment in general. The maximum leverage value is 76 percent, while the minimum value is 0 percent, implying lack of dependency on long-term debt for investment. The average working capital to assets ratio ($WC_{i,t-1}/A_{i,t-1}$) is 9 percent, with a standard deviation of 24 percent. The maximum working capital to assets ratio is 68 percent, whereas the minimum value is –88 percent. The mean value of equity financing ($EFD_{i,t-1}$) is 31 percent, with a standard deviation of 46 percent. This implies that many firms in our sample have raised funds by issuing shares. Lastly, on average, 33 percent of the sample firms are large.

Table 1: Summary Statistics

Variables	Mean	SD	Min	Max	Median	Skewness	Kurtosis
Rate of investment	0.44	0.23	0.01	0.96	0.43	0.19	-0.75
Financial constraints	0.10	0.09	-0.42	0.45	0.09	-0.20	2.10
Managerial shareholding	0.16	0.22	0.00	0.95	0.02	1.57	2.09
Sales growth rate	0.13	0.33	-0.91	3.89	0.10	3.54	34.37
Tobin's Q	1.13	1.15	0.04	8.34	0.78	2.49	7.97
Leverage ratio	0.09	0.13	0.00	0.76	0.04	2.31	5.79
Working capital	0.09	0.24	-0.88	0.68	0.07	-0.50	1.21
Equity financing	0.31	0.46	0.00	1.00	0.00	0.84	-1.29
Firm size	0.33	0.12	0.00	1.00	0.00	0.72	-1.22

Note: This table presents descriptive statistics for 60 nonfinancial firms listed on the PSX during the period 2011 to 2020.

4.2. Testing Cross-Section Dependence in Residuals

To test the cross-sectional dependence of the dataset, we apply the Pesaran cross-sectional dependence (CD) test, as the number of crosssections is greater than the time. Since the p-value of the Pesaran CD test is 0.00, which is less than 0.05, we do not accept the null hypothesis of cross-sectional independence in residuals and conclude that there is cross-sectional dependence in the residuals.[2]

4.3. Panel Unit Root Test

We employ a second-generation panel unit root testing technique to analyze the stationarity of our dataset, based on the cross-sectional dependence test. We utilize the cross-sectional augmented Dickey-Fuller (CADF) and cross-sectional augmented Im-Pesaran-Shin (CIPS) unit root tests (see Table 2). The results of the CADF test indicate that managerial shareholding, sales growth rate and Tobin's Q are significant in levels. In contrast, the investment rate, cash flow (financial constraints), leverage and working capital ratio are significant only in first difference. The CIPS test results reveal that all the variables, except for the working capital ratio, are significant in levels. The working capital ratio becomes significant when analyzed in first difference.

Table 2: Panel Unit Root Test Results

Variable	CADF		CIPS	
	I(0)	I(1)	I(0)	I(1)
Rate of investment	-1.83	-2.20***	-0.21**	-
Financial constraints	-1.97	-2.59***	-2.14**	-
Managerial shareholding	-2.61***	-	-3.23***	-
Sales growth rate	-2.32***	-	-3.37***	-
Leverage ratio	-1.74	-1.99**	-2.16**	-
Working capital	-1.84	-2.41**	-1.63	-2.50***
Tobin's Q	-3.14***	-	-2.60***	-

Note: *** and ** show the significance levels at 1 percent and 5 percent, respectively. Equity financing and firm size are dummy variables and so their unit root cannot be tested.

4.4. Financial Attributes of Firms' Investment

Model 1 considers only financial constraints and control variables, while Model 2 enhances the investment equation by adding the managerial shareholding variable, its interaction with cash flow (financial constraints) and the interaction between firm size and debt finance (see Table 3). This allows us to examine the indirect effect of firm size on the rate of investment. In both models, the estimated coefficient of the lagged investment ratio is

[2] We apply VIF to test multicollinearity. The results show that all variables exhibit values less than the benchmark.

positive and statistically significant, indicating that current investment is influenced by the previous year's investment. Additionally, the statistically significant negative coefficient of the square of the lagged investment ratio suggests that investment increases at a decreasing rate.

Table 3: Managerial Shareholding, Firm Investment and Financial Constraints

Variables	(1)	(2)
Rate of investment	0.214**	0.258**
	(0.096)	(0.112)
Rate of investment^2	-0.032**	-0.034**
	(0.014)	(0.016)
Financial constraints	1.043***	1.057***
	(0.047)	(0.005)
Sales growth rate	0.254**	0.289**
	(0.128)	(0.127)
Leverage ratio	0.750*	1.602**
	(0.414)	(0.755)
Working capital	-0.066	-0.069
	(0.052)	(0.064)
Firm size	0.137**	0.094
	(0.067)	(0.089)
Equity financing	0.079	0.212
	(0.095)	(0.172)
Managerial shareholding		0.723***
		(0.134)
Financial constraints * managerial shareholding		2.167***
		(0.712)
Leverage ratio * firm size		1.297**
		(0.584)
Constant	0.966**	-0.672*
	(0.193)	(0.291)
Observation	540	540
Groups	60	60
AR(2) test (p-values)	-1.52 (0.130)	-1.66 (0.097)
Hansen test of over-identification	41.74 (0.23)	40.84 (0.164)
Instruments	45	45
F-statistics	303189.52	53629.5

Note: This table gives the system GMM results. Standard errors are reported in parenthesis. ***, ** and * show the level of significance at 1 percent, 5 percent and 10 percent, respectively.

The positive and significant coefficient ($p < 0.01$) for financial constraints in both models indicates that firm investment is dependent on internally generated funds, supporting Hypothesis 2. As internally generated funds increase, the investment rate is also likely to rise. The coefficient for financial constraints is 1.043, with a standard deviation of

0.09, as shown in Table 1, and the average investment value is 0.44. This suggests that a one-standard deviation increase in internally generated funds would result in a 21.3 percent increase in firm investment, based on the average investment ratio of 0.44. Additionally, these results indicate that firms are unable to invest in high-return assets due to a lack of external financing, suggesting they are financially constrained. As cash flows increase, firms tend to rely solely on internal financing and seek to avoid costly external financing. This evidence shows that firms in Pakistan face financial constraints regarding investment, as their investment levels are sensitive to fluctuations in cash flows. This finding aligns with the pecking order theory, which posits an imbalance between debt and equity (Allini et al., 2024; Ali et al., 2024a).

We observe a positive and significant relationship ($p < 0.05$) between sales growth and investment, indicating that increased sales growth leads to higher net earnings and consequently an elevated investment rate. Higher sales generate greater retained earnings, prompting firms to invest in technologically advanced and efficient assets, which, in turn, enhance productivity and profitability. Additionally, a positive and significant leverage ratio ($p < 0.10$) suggests that firms do not rely solely on internally generated funds for investment. Rather, long-term borrowing can facilitate increased investment in fixed assets. This finding implies that firms with higher leverage have access to more financial resources that can be used to fund investments.

Higher-leveraged firms also exhibit better creditworthiness, allowing them to raise external financing quickly and at lower interest rates. In Model 1, firm size is positively significant, indicating that as size increases, so do financial resources, enabling a higher investment rate. The dummy variable for equity financing is positive, suggesting that increased equity financing leads to a rise in funds generated by the firm, thereby increasing the investment rate; however, this variable is insignificant. Lastly, the coefficient for the working capital to total assets ratio is negative, indicating that working capital is used to 'smooth fixed investment,' although this finding is insignificant in both models.

Model 2 presents the findings of the augmented version of the investment equation. The coefficient for managerial shareholding is positive and statistically significant ($p < 0.01$), indicating that an increase in managers' equity stakes is associated with higher firm investment, consistent with Hypothesis 1. This result supports the notion of agency theory (Aggarwal & Samwick, 2006; Okamoto, 2024). By increasing their equity ownership, managers align their interests with those of shareholders, leading to decisions that maximize business returns.

The coefficient for the interaction term is positive and statistically significant, aligning with Hypothesis 3. This positive interaction suggests that greater managerial shareholding enhances the direct impact of financial constraints on investment. Managers tend to avoid raising external finance for investments as it is generally more expensive and risky. This behavior aligns the objectives of shareholders and managers, focusing on minimizing costs while maximizing returns. However, this alignment may have limitations. Avoiding external financing can cater to short-term interests, which aligns with Tobin's Q theory, suggesting that higher managerial shareholding could lead to entrenchment. Entrenched managers, who have substantial control, may act in ways that hinder improvements in firm performance and value. This situation can allow them to pursue self-serving actions without full accountability to other investors, ultimately jeopardizing the firm’s long-term performance (Ali et al., 2024c; Tayeb et al., 2023).

We include the firm size * leverage interaction to capture the indirect effect of firm size. Our findings reveal a positive association, indicating that as firm size increases, reliance on debt financing also grows. This suggests that larger firms face fewer financial constraints in their investment activities. Generally considered more creditworthy, large firms have easier access to external finance (debt), allowing them to ramp up their investment rates. The other control variables in Model 2 exhibit similar relationships with investment, as noted in Model 1, with the exception of the firm size variable, which became insignificant in Model 2.

4.5. Sectoral Analysis

We classify textiles, automobile, cement, chemical and pharmaceutical industries as manufacturing firms, while oil and gas as well as power generation companies fall under the energy/power sector. Table 4 presents the empirical findings for both sectors.

The positive and significant coefficient of the lagged investment ratio in Models 1 and 2 indicates that the current investment rate of manufacturing firms is influenced by their investment from the previous year. The negative coefficient of the square of the lagged investment ratio suggests that investment in the manufacturing sector increases at a decreasing rate. Models 1 and 2 also reveal a significant positive relationship ($p < 0.01$) between financial constraints and investment, highlighting that manufacturing firms heavily rely on internally generated funds. In Pakistan, manufacturing firms face challenges in accessing external finance, which can be costly due to interest obligations (Mumtaz & Ahmed, 2016).

The study finds that managerial shareholding does not have a direct impact on a firm's investment within the manufacturing sector. Model 2 indicates that managerial ownership negatively affects how manufacturing firms experience financial constraints. Conversely, sales growth has a positive effect on the investment ratio, confirming an accelerator effect of sales on firm investment in the manufacturing sector. As a key predictor of current investment, sales growth reflects available investment opportunities for these firms. The analysis also shows a negative relationship ($p < 0.05$) between working capital and firm investment, suggesting that manufacturing firms use their working capital to smooth out investment fluctuations (Model 1). Equity financing emerges as a significant predictor of investment in this sector, with the dummy variable for equity financing showing positive significance in Models 1 ($p < 0.10$) and 2 ($p < 0.05$). This indicates that manufacturing firms utilize equity financing as an important external source of funds for their investment activities.

Table 4: Managerial Shareholding, Firm Investment and Financial Constraints for Manufacturing and Energy/Power Sectors

Variables	Manufacturing sector		Energy/power sector	
	(1)	(2)	(3)	(4)
Rate of investment	0.754**	0.865*	0.846***	0.773*
	(0.365)	(0.472)	(0.347)	(0.390)
Rate of investment^2	-0.022**	-0.015*	-0.249**	-0.221*
	(0.010)	(0.008)	(0.114)	(0.121)
Financial constraints	1.829***	1.826***	-0.306	-1.243
	(0.231)	(0.271)	(0.377)	(0.863)
Sales growth rate	0.287***	0.269***	0.372***	0.364***
	(0.050)	(0.065)	(0.034)	(0.079)
Leverage ratio	0.107	0.344	0.199	0.442
	(0.298)	(0.424)	(0.244)	(0.405)
Working capital	-0.609**	-0.443	-0.143*	-0.260***
	(0.258)	(0.354)	(0.079)	(0.079)
Firm size	0.167	0.136	0.189	0.321
	(0.126)	(0.274)	(0.172)	(0.333)
Equity financing	0.906*	0.915**	0.083*	0.092*
	(0.484)	(0.423)	(0.047)	(0.050)
Managerial shareholding		-0.813		-0.464***
		(0.753)		(0.169)
Financial constraints *		-1.004		6.359
managerial shareholding		(2.385)		(3.964)

Variables	**Manufacturing sector**		**Energy/power sector**	
	(1)	**(2)**	**(3)**	**(4)**
Constant	0.612	0.472	0.083	0.042
	(0.599)	(0.765)	(0.136)	(0.184)
Observation	333	333	207	207
Groups	37	37	23	23
AR(2) test (p-values)	-0.59 (0.558)	-0.41 (0.684)	-1.54 (0.123)	-1.19 (0.234)
Hansen test of over-identification	18.86 (0.220)	14.75 (0.225)	6.88 (0.549)	3.79 (0.706)
Instruments	18	18	17	17
F-statistics	2200.22	1466.41	265.79	64.72

Note: This table gives the system GMM results for the manufacturing and energy/power sectors. Standard errors are reported in parenthesis. ***, ** and * show the levels of significance at 1 percent, 5 percent and 10 percent, respectively.

Models 3 and 4 present the results for the energy and power sectors. The financial constraints variable is negative and statistically insignificant in both models, indicating that firms in these sectors are not financially constrained and, therefore, are able to utilize external sources of finance for their investment activities. Model 4 reveals an inverse relationship between managerial shareholding and investment levels in these sectors. This finding contradicts the core tenets of agency theory, which suggests that managerial shareholding enables firms to select projects with a positive NPV since managers internalize the costs and benefits of their decisions, leading to better investment choices. However, granting excessive equity ownership to managers may distort the intended benefits of managerial shareholding. In positions of power, managers can leverage corporate resources for their own advantage, ultimately impacting the firms' profitability and investment results.

The interaction of financial constraints and managerial shareholding is positive but statistically insignificant in Model 4. Sales growth shows a positive and significant relationship ($p < 0.01$) with investment in both models, suggesting that higher sales lead to increased earnings and cash flows, which in turn expand the pool of internally generated funds available for investment. The working capital to assets ratio has a negative and statistically significant coefficient in both Model 3 ($p < 0.10$) and Model 4 ($p < 0.01$). The equity funding variable demonstrates a positive relationship with investment ($p < 0.10$), indicating that issuing equity shares bolsters the investment activities of firms in the energy and power sectors.

4.6. Financial Attributes of Firms' Investment: Tobin's Q Approach

We employ an alternative investment model, commonly known as Tobin's Q model, to investigate how Tobin's Q influences the level of investment in firms. Model 1 provides estimates that include control variables, while Model 2 presents an enhanced version of the original model to capture both the direct and indirect effects of managerial shareholding. The results from the system GMM analysis are displayed in Table 5.

Our findings indicate that financial constraints have a positive and significant impact on investment ($p < 0.01$). This supports the previous model's conclusion that Pakistani firms are experiencing financial limitations in their investment activities. As these firms increase their internally generated funds, their investment levels are also expected to rise. However, it also implies that as firms rely more on internal financing, they tend to shy away from costly external finance, which may exacerbate their financial constraints (Ali et al., 2024b; Tayeb et al., 2023). Model 1 shows a negative relationship between Tobin's Q and investment, although this result is statistically insignificant. In contrast, Model 2 indicates a positive coefficient ($p < 0.05$), suggesting that Tobin's Q reflects a firm's actual growth potential. This finding implies that firms are increasingly recognizing their potential, thereby expanding their investment opportunities.

Anderson et al. (2006) predict that managerial ownership reduces information asymmetry and acts as a form of collateral for debt financing, enabling firms to more easily fund their investment activities through external sources. Managerial shareholding is shown to have a positive and significant effect in Model 2 ($p < 0.10$), aligning with our earlier results that indicate higher managerial ownership leads to more responsible management and better investment decisions. While the direct effect of managerial shareholding is consistent with prior findings, the indirect effect presents a contrasting result. Specifically, the interaction term in Model 2 is negative ($p < 0.05$), challenging our earlier conclusion and suggesting that the influence of financial constraints on investment weakens as managerial ownership increases. This suggests that firms with higher managerial ownership may not effectively utilize internal financing to the same degree as those with lower ownership levels. It is possible that entrenched managers are hesitant to seek external funding or to engage in riskier investment choices.

Table 5: Firm Investment, Managerial Shareholding and Financial Constraints: Tobin's Q Approach

Variables	(1)	(2)
Rate of investment	0.107***	0.075***
	(0.001)	(0.002)
Financial constraints	0.856***	0.897***
	(0.001)	(0.002)
Tobin's Q	-0.005	0.011**
	(0.003)	(0.005)
Managerial shareholding		0.593*
		(0.320)
Financial constraints * managerial shareholding		-1.723**
		(0.766)
Constant	0.320***	0.273***
	(0.007)	(0.009)
Observation	540	540
Groups	60	60
AR(2) test (p-values)	-1.11 (0.266)	-1.11 (0.267)
Hansen test of over-identification	44.41 (0.220)	46.68 (0.110)
Instruments	42	42
F-statistics	870670.83	478441.57

Note: This table gives the system GMM results of Tobin's Q model. Standard errors are reported in parenthesis. ***, ** and * show levels of significance at 1 percent, 5 percent and 10 percent, respectively.

5. Conclusion

We investigate the simultaneous impact of managerial shareholding and financial constraints on a firm's investment decisions. Previous studies indicate that various financial factors can influence investment. To explore the relationship between managerial shareholding, financial constraints, and firm investment, we examine 60 nonfinancial firms listed on the PSX from 2011 to 2020. Utilizing the system GMM technique, our results reveal that all variables, except the working capital to total assets ratio and equity financing, significantly affect the level of investment. The findings confirm that past investments influence current corporate investment and that investments tend to increase at a decreasing rate.

Our results indicate that past investments have a spillover effect on present investments, suggesting that engaging in investment activities is a 'smooth process' for firms in Pakistan. As firms continue to increase their investments, they are likely to avoid incurring high adjustment costs. Furthermore, the growing reliance of Pakistani enterprises on internally generated funds imposes financial constraints and heightens the sensitivity of their investments to cash flows. The results also demonstrate an incentive alignment effect associated with managerial shareholding, as it positively impacts firms' investment levels. Notably, managerial shareholding has a significant indirect effect, indicating that Pakistani firms prefer to avoid costly external financing and primarily rely on internally generated resources, thereby confirming the pecking order hypothesis.

When analyzing by sector, we find that firms in Pakistan's energy/power sector are not financially constrained in their investments; they tend to rely on external sources such as long-term loans, share issuances, and government grants and subsidies. In contrast, manufacturing firms are financially constrained and depend on cash flows to finance their investment projects. Interestingly, managerial ownership does not affect investments in manufacturing firms. However, in the energy/power sector, managerial equity ownership has a negative yet significant effect on the investment rate, highlighting the influence of managerial entrenchment in this sector. Overall, smooth and efficient business operations create a healthy corporate environment that positively impacts economic performance. This study contributes to effective investment decision-making by assisting shareholders and financial investors in evaluating investment choices and expanding investment opportunities.

This paper emphasizes the significance of managerial shareholding and financial constraints, providing valuable insights for policymakers. It suggests that ownership reforms in Pakistan need to be revised, and the proper implementation of these reforms must be ensured. By legally requiring firms to offer equity ownership to managers, agency conflicts and issues stemming from information asymmetry can be reduced. Such policies could lead to improved investment decisions and promote economic growth. Additionally, recognizing that firms in the energy and power sectors face fewer constraints and actively utilize external financing indicates the potential for developing tailored financial policies to address sector-specific needs. These insights can guide financial institutions and investors on where to allocate resources for maximum impact.

Nevertheless, this study has some limitations. First, it focuses on 60 nonfinancial firms listed on the PSX from 2011 to 2020. This relatively small sample may not adequately represent the diversity of investment behaviors across various sectors, potentially limiting the generalizability of the findings. Future research could benefit from a larger sample size to enhance this aspect. Second, the operational definitions of financial constraints and managerial shareholding might not capture all relevant dimensions. Future studies could explore alternative measures to better understand the relationships between these variables and investment decisions. Third, while the study identifies associations among variables, it does not establish causal links. Experimental designs could provide more robust evidence regarding the causal effects of managerial shareholding and financial constraints on investment decisions. Finally, this study does not clarify how these factors influence a firm's investment decisions. For future research, we recommend examining how managerial shareholding and financial constraints affect a firm's investment choices. In this context, considering two or more markets could facilitate a comparison of shareholding patterns and identify the impact of financial constraints on firm investments.

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The Effect of Celebrity Endorser Selection on Consumer Purchase Intention

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Abstract: *While companies often use celebrity endorsement to increase their sales, they fail to realize that the selection of the endorser greatly influences consumer purchase intention. Consequently, they may end up using an endorser based solely on their popularity, with a poor match between the product/brand and the endorser. This study explores the factors of celebrity endorsement that significantly influence purchase intention. A sample of 560 survey respondents was used to collect data. Closed-ended questionnaires were distributed in person and online. SmartPLS was used for data analysis. The results indicate that product/brand and celebrity match plays a significant role in influencing all other variables of celebrity endorsement, namely the credibility of the endorser and meaning transfer, which then influences the consumer's intention to purchase the product. Therefore, marketers in Pakistan should focus on the three pillars of celebrity endorsement: the product/brand and celebrity match, credibility, and meaning transfer. Specifically, giving primary importance to the product/brand and celebrity match while designing an advertisement is crucial.*

Keywords: Celebrity endorsement, product celebrity match-up, meaning transfer, attractiveness, trustworthiness, expertise.

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The Effect of Celebrity Endorser Selection on Consumer Purchase Intention

1. Introduction

Adam and Hussain (2017) observe that one of the most effective strategies for companies to boost sales is to convert well-known personalities into sales representatives. This approach involves using celebrities as spokespersons for products or brands, commonly referred to as celebrity endorsements (Macheka et al., 2024). In line with this, D'Ambrogio et al. (2023) find that marketers leverage celebrity endorsements to create strong associations with products and enhance brand recall. Such endorsements not only help establish associations and foster bonds but also enhance credibility in the minds of consumers, ultimately increasing their intention to purchase. When consumers see their favorite celebrity promoting a product, it captures their attention immediately (Al Mamun et al., 2023; Ha & Lam, 2017; Khan, 2018; Khan et al., 2019; Zhang & Xu, 2024).

Consumers are more inclined to purchase products endorsed by celebrities they view as credible and trustworthy. Furthermore, they tend to associate this credibility and trustworthiness with celebrities who align with the product/brand they are endorsing (Khan, 2018; Khan et al., 2019; Zhang & Xu, 2024). Therefore, it is essential to select celebrity endorsers whose characteristics, personalities, and expertise align with the product/brand to establish credibility, trustworthiness, meaning transfer, and positive purchase intentions.

Aurangzeb et al. (2017) emphasize that to enhance the likability of a product/brand and drive sales, employing celebrity endorsements is a key strategy. When a celebrity discusses a product/brand, it generates more word-of-mouth promotion and boosts brand recall. However, if the celebrity does not resonate with the product, the intended message loses its impact, and the meaning may not effectively transfer to consumers. This lack of meaning transfer diminishes credibility and trustworthiness, resulting in lower purchase intentions (Khan, 2018; Khan et al., 2019; Tian et al., 2022).

To achieve optimal results from advertising and marketing campaigns, a strong alignment between the product/brand features and the characteristics of the endorsing celebrity is crucial. However, matching a celebrity with a product for an advertisement is not a straightforward task. Companies must possess a deep understanding of the celebrity—considering their personality, characteristics, expertise, and how consumers perceive them—as well as the product being endorsed. Consequently, it is vital to identify factors that influence the effective use of celebrity endorsement to enhance consumer purchase intentions (Afifah, 2022; Khan, 2018).

Marketers frequently enlist celebrities who are either at the peak of their careers or have recently gained renown due to a successful project. However, they often struggle to establish a meaningful connection between the celebrity and their product/brand, leading to the common pitfall of choosing the wrong endorser based solely on current popularity. A weak association between the endorser and the promoted product can result in ineffective marketing campaigns and minimal sales increases. Hollensen and Schimmelpfennig (2013) point out that the assumption that creative agencies thoroughly vet endorsers before hiring them is often incorrect and not universally applicable. Similarly, Ofori-Okyere and Asamoah (2015) and Shukla and Dubey (2022) express concerns regarding improper selection.

Hsu and Hsu (2018) find that the alignment between a celebrity and a product/brand is a crucial factor often overlooked by companies. The repercussions of this misalignment include diminished meaning transfer and reduced credibility of the endorser, which affects consumers' purchase intentions negatively (Kim & Park, 2023). This study aims to empirically validate the importance of celebrity-product/brand alignment in relation to factors such as the celebrity's credibility, meaning transfer and consumer purchase intention. It investigates whether a strong match between a celebrity and a product/brand can lead to successful marketing campaigns and improved consumer purchase intentions. Furthermore, we examine meaning transfer as a mediator between celebrity-product/brand alignment and credibility. By doing so, we provide a comprehensive understanding of how a well-matched celebrity can enhance the intended message and overall credibility of an advertisement.

The remainder of the study is organized as follows: Section 2 elaborates on the relationships among variables in the literature review and presents the development of hypotheses. Section 3 details the methodology employed in the research. Section 4 offers data analysis and interpretations for each test conducted. The discussion of the results is found in Section 5, and Section 6 concludes the study.

2. Literature Review

2.1. Purchase Intention

Carvalho (2012) argues that a positive relationship exists between consumer purchase intention and the endorser. Consumers often seek out and buy products/brands associated with their favorite celebrities. Additionally, they tend to align themselves with the personality, style and behavior of these celebrities, fostering a perception of similarity. Recognizing this aspect of consumer behavior, many companies leverage celebrity endorsements to market products that consumers believe will bring them closer to their favorite celebrities (Zhang & Xu, 2024). However, Singh and Banerjee (2018) and Halder et al. (2021) emphasize that the credibility of the endorser is a more significant factor influencing consumer purchase intention.

Zafar and Rafique (2012) note that celebrities are also consumers who use products to meet their own needs. By showcasing these products, celebrities create a desire among their fans to emulate their lifestyles. Companies capitalize on this yearning to replicate celebrity lifestyles by employing celebrity endorsements to boost purchase intentions for their products (Moslehpour et al., 2024). Rehman et al. (2018) investigate the effects of celebrity involvement in promotional campaigns, finding that factors such as purchasing behavior, celebrity-product fit, quality, expertise, trust, and the celebrity's image are all interconnected with celebrity endorsements. Furthermore, these factors significantly influence consumer perceptions and purchase intentions (Zhang & Xu, 2024).

Emmadi (2017) and D'Ambrogio et al. (2023) note that celebrity endorsement has become a highly sought-after marketing strategy, forming the foundation of many brands' promotional campaigns and driving changes in marketing trends. As celebrities serve as role models for many, consumers often imitate their styles and fashion choices. Consequently, many firms hire celebrities to influence buyers' purchase intentions.

2.2. Credibility

Goldsmith et al. (2000) confirm that higher credibility of the endorser correlates with increased purchase intention. When credible sources are used in advertisements, they can influence consumers' judgments, evaluations, attitudes, and behaviors, leading them to accept the information as accurate. Singh and Banerjee (2018) and Giri and

Alfaruqi (2023) emphasize that celebrity credibility plays a crucial role in forming a positive attitude towards a product/brand, which subsequently enhances consumer purchase intention.

Amos et al. (2008) and Rifon et al. (2023) find that any negative information about a celebrity can severely damage an advertising campaign. The success of these campaigns relies heavily on source credibility, celebrity reliability, expertise, and the fit between the celebrity and the product. These factors are among the most influential in shaping purchase expectations, brand attitudes, and perceptions of advertisements, thereby enhancing consumer purchase intention. Similarly, Yoo et al. (2018) highlight that credibility is derived from three subdomains: trustworthiness, expertise, and celebrity attractiveness. These sub-factors are further discussed below for clarity.

2.2.1. Trustworthiness

Hussain et al. (2020) and Sutia et al. (2023) argue that trustworthiness not only influences attitudes toward a celebrity but also shapes consumer perceptions of the product, brand and parent company. Negative consumer attitudes can result in diminished purchase intentions, potentially leading to substantial losses for the company. Therefore, it is crucial for companies to choose endorsers who are perceived as trustworthy by consumers. Wang and Scheinbaum (2017) and Ramli et al. (2023) note that trustworthiness fosters a positive brand attitude, particularly when consumers have limited prior associations with the brand. A trustworthy celebrity can encourage consumers to take risks and try a product/brand for the first time, thus increasing purchase intentions.

2.2.2. Expertise

According to Adam and Hussain (2017) and Ramli et al. (2023), credibility encompasses three components: trustworthiness, attractiveness, and expertise. Notably, these studies indicate that in the beauty care industry, consumers prefer products endorsed by celebrities who are both trustworthy and possess relevant expertise. When both expertise and trustworthiness are evident in a celebrity endorser, the endorser is perceived as credible, positively influencing consumer purchase intentions (Sutia et al., 2023). Wang and Scheinbaum (2017) also argue that a celebrity endorsing a product should be regarded as an expert in the respective field; otherwise, the trustworthiness of both the celebrity and the product/brand may be questioned.

2.2.3. Attractiveness

Adam and Hussain (2017) and Ramli et al. (2023) show that attractiveness is another key aspect of credibility, which can be further divided into similarity, likability, and familiarity. An attractive celebrity is often seen as the ideal figure to promote products/brands, particularly in the beauty sector. However, the beauty industry is fraught with risks and potential lawsuits and thus, endorsers cannot claim that the product will enhance a consumer's attractiveness or alter their appearance, making attractiveness a secondary consideration compared to expertise and trustworthiness (Calvo-Porral & Lévy-Mangin, 2024; Kim & Park, 2023). Lili et al. (2022) find that attractiveness significantly impacts young consumers' purchase intentions.

Hypothesis 1: The credibility (comprising attractiveness, trustworthiness, and expertise) of a celebrity endorser positively influences purchase intention.

2.3. Credibility as a Mediator

Iyengar and Valentino (2000) demonstrate that credibility is a crucial factor in determining the effectiveness of an advertisement. If the endorser is perceived as unreliable, the entire marketing effort is undermined, reducing the advertisement to mere background noise. Similarly, Schrodt et al. (2009) and Sutia et al. (2023) find that credibility plays a significant mediating role in achieving desired outcomes, such as brand satisfaction. Furthermore, Vidyanata et al. (2018) show that while celebrity endorsement alone does not directly influence consumer purchase intentions, its effectiveness can be greatly enhanced when the endorser is perceived as credible. The endorser's credibility is vital for meaning transfer; when the endorser is deemed untrustworthy, the communicated message loses its significance and effectiveness, which negatively impacts consumer purchase intentions. Schouten et al. (2020) also support this idea, stating that credibility mediates advertisement effectiveness by improving meaning transfer and, in turn, increasing consumer purchase intentions. Therefore, companies should select endorsers who are perceived as credible by their target audience.

Hypothesis 2: The credibility (attractiveness, trustworthiness, and expertise) of the celebrity endorser mediates the relationship between product-celebrity match and purchase intention.

Hypothesis 3: The credibility (attractiveness, trustworthiness, and expertise) of the celebrity endorser mediates the relationship between meaning transfer and purchase intention.

2.4. Product/Brand and Celebrity Match

Choi and Rifon (2012) and Yang et al. (2022) discuss the close connection between a celebrity's personality and a consumer's self-concept. They note that when an endorser promotes a product/brand that is not aligned with their image, the endorsement is likely to be ineffective, as consumers may question the credibility of the message. When consumers fail to associate the endorser with the product/brand, they also struggle to connect it to their self-concept, which is intertwined with that of the endorser (Zhang & Xu, 2024). Therefore, a match between the product/brand and the endorser is essential for effective advertising.

Brand and celebrity associations significantly influence the believability of the advertisement and the intention to purchase the product/brand. Mishra (2015) examines two brands: one with a high-level match between the endorser and the product/brand and another with a low-level match. The study shows differences in believability and attitudes toward the advertisement between the two brands. However, attitudes toward the brand itself and intentions to purchase remain similar in both cases (Jun et al., 2023).

The choice of an endorser is critical for promoting and publicizing a product/brand. Even more crucial is finding a suitable match between the product/brand and the endorser, as this alignment influences consumer attitudes and their purchasing intentions. This necessity is why companies often take considerable time to select the right representative for their products/brands (Fleck et al., 2012). Vidyanata et al. (2018) and Jun et al. (2023) note that when companies overlook the congruence between the endorser and the product, the advertisement's intended message fails to transfer effectively, negatively impacting consumer purchase intentions. Similarly, Khan et al. (2019) point out that a poor match between the endorser and the product/brand can diminish both credibility and purchase intention.

Hypothesis 4: The match between the product/brand and the celebrity endorser positively impacts purchase intention.

Hypothesis 5: The match between the product/brand and the celebrity endorser positively impacts meaning transfer.

Hypothesis 6: The match between the product/brand and the celebrity endorser positively impacts the credibility of the endorser.

2.5. Meaning Transfer

Roy and Jain (2017) empirically measure and validate the model of meaning transfer. They find that a celebrity significantly influences the meaning transfer of an advertisement, as intended by the company, which ultimately affects consumer purchase intention. Additionally, the endorser's knowledge of the product and the level of product involvement also contribute to successful meaning transfer, leading to increased positive purchase intentions among consumers.

Source attributes such as attractiveness, trustworthiness, and expertise alone are inadequate for achieving effective results in celebrity endorsements. Instead, the celebrity-product match and meaning transfer model provides a more reliable framework for ensuring the success of celebrity endorsements. Numerous campaigns that excelled in source attributes and product differentiation but fell short in relevance to celebrity meanings and match-ups have proven unsuccessful (Zhang & Xu, 2024). Notably, when a product involves high levels of physical, financial, and performance risks, the match between the celebrity and the product becomes even more crucial; marketing campaigns that fail to establish this congruence in consumers' minds tend to underperform (Hussain & Khan, 2015).

Halonen-Knight and Hurmerinta (2010) reveal that celebrity endorsements involve a two-way transfer. This means that not only does the celebrity endorser's image affect the product/brand image, but the product/brand's image can also impact the endorser's image. Their research demonstrated that a brand's negative image could transfer to the celebrity, resulting in negative publicity for the endorser. Moreover, meanings are typically associated more directly with the celebrity endorser than with the brand itself (Rifon et al., 2023). Interestingly, Malodia et al. (2017) note that when a single celebrity endorses multiple products or brands simultaneously, the potential for meaning transfer diminishes, often negatively influencing consumer purchase intentions.

Hypothesis 7: Meaning transfer has a positive impact on purchase intention.

Hypothesis 8: Meaning transfer enhances the credibility of the endorser.

2.6. Meaning Transfer as a Mediator

Meaning transfer is a critical component of celebrity endorsement. The match between the product/brand and the endorser significantly influences consumer purchase intention, particularly when meaning transfer is executed effectively. Therefore, it is essential for the selected celebrity endorser to convey the intended message of the product/brand to consumers (Rifon et al., 2023). If the celebrity can connect to the meaning of the product/brand, the intended message is accurately conveyed to consumers, positively affecting both the credibility of the endorser and consumer purchase intention (Hussain & Khan, 2015). Additionally, companies should be cautious in selecting endorsers who promote multiple products/brands simultaneously to prevent negative or confusing meaning transfer (Jun et al., 2023; Malodia et al., 2017).

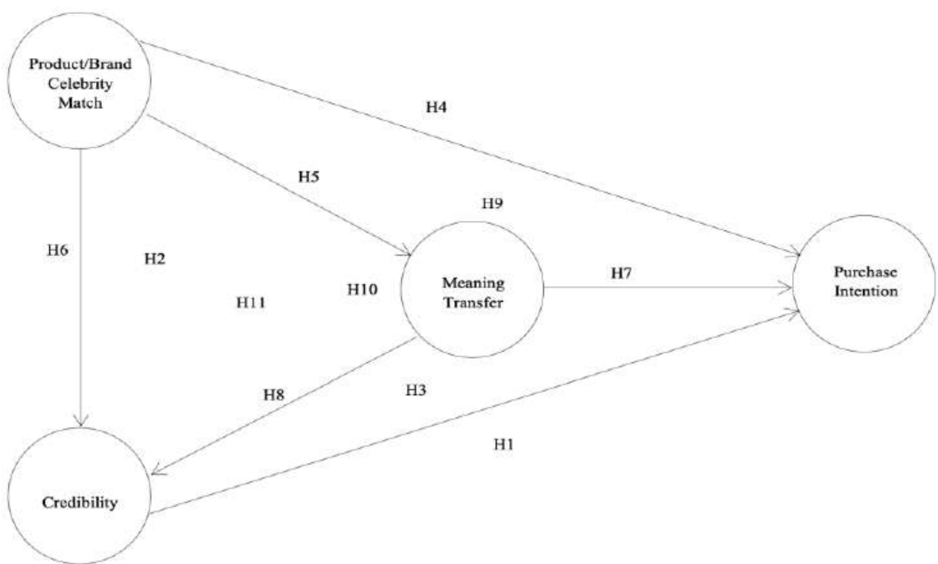
Hypothesis 9: Meaning transfer mediates the relationship between product/brand and celebrity match and purchase intention.

Hypothesis 10: Meaning transfer mediates the relationship between product/brand and celebrity match and endorser credibility.

Hypothesis 11: Meaning transfer and credibility act as mediators between product/brand and celebrity match and purchase intention (double mediation).

Figure 1 presents the conceptual framework illustrating the relationships and paths tested in this study.

Figure 1: Conceptual framework



3. Research Methodology

3.1. Population and Sample Size

This study focuses on the purchase intentions of young consumers in Pakistan, where over 64 percent of the population is under the age of 30, with 29 percent between the ages of 15 and 19 (The News, 2018). Karachi, a metropolitan city known for its diverse backgrounds, cultures, and lifestyles (Karachi Metropolitan Corporation, 2018), is chosen as the target city for the research. A questionnaire based on a 5-point Likert scale was employed for data collection. According to the World Population Review (2016), Karachi's population is approximately 15.7 million. The choice of Karachi for this study was motivated by its status as a metropolitan hub, which offers a broad pool of respondents from various origins and backgrounds.

The final sample comprised 560 respondents, which is an appropriate size according to Hair et al. (2013) and Kline (2015). A similar sample size was utilized in a study by Khan et al. (2019). This research employed purposive sampling to target respondents who were aware of and had been exposed to celebrity endorsements within the previous two weeks. Young consumers were chosen as respondents because marketers aim to capture their attention, and this demographic is often more influenced by celebrity endorsements due to peer pressure and the desire for symbolic value (Ahmad et al., 2019). Questionnaires were administered only to those respondents who were comfortable reading and understanding English.

3.2. Measurement

The measurement scale for this study was based on Ohanian (1990), with the purchase intention scale adapted from Tingchi-Liu and Brock (2011), and the meaning transfer scale adapted from Roy and Jain (2017). In the instrument, 'strongly disagree' corresponds to 5, while 'strongly agree' corresponds to 1. Although the reliability of the instrument is supported by prior literature, it was also tested in this study. Credibility was measured using seven items, meaning transfer with five items, product/brand and celebrity match with four items, and purchase intention with twelve items. However, due to low factor loadings, one item was removed from the product/brand and celebrity match, three items from meaning transfer, and nine items from purchase intention.

The questionnaires were distributed in universities and malls through two methods: (a) via Google Forms to Karachi residents, and (b) face-to-face distribution at malls and universities in Karachi. Respondents were selected based on their familiarity with celebrity endorsements and their ability to recall three recent advertisements featuring a celebrity. Screening questions were implemented to ensure eligibility for the study. Out of 800 questionnaires distributed, 560 usable responses were collected, resulting in a response rate of 70 percent.

4. Results and Analysis

4.1. Descriptive Statistics

Table 1 summarizes the demographics of the respondents, including their gender, age, and income. Most respondents (60 percent) were female, and a large majority (66 percent) were aged 18–23. Additionally, a majority of respondents reported an income over Rs 70,000 (58.5 percent).

Table 1: Respondent Demographics

		Number	Percentage
Gender	Male	225	40%
	Female	335	60%
Age (in years)	15-17	42	8%
	18-23	370	66%
	24-30	148	26%
Income	30k-50K	102	18%
	50k-70K	132	23.5%
	70k-90K	217	39%
	90k and above	109	19.5%

We conducted a descriptive analysis to assess univariate normality and internal consistency. The summary is presented in Table 2.

Table 2: Descriptive Analysis

Construct	Mean (M)	SD	Kurtosis (K)	Skewness (SK)	Cronbach's Alpha(α)
Credibility	2.895	0.842	-0.635	0.051	0.906
Meaning Transfer	2.432	0.765	-0.206	0.181	0.771
Product/Brand Celebrity Match	2.938	0.800	0.026	0.297	0.819
Purchase Intention	2.432	0.529	0.618	0.201	0.709

The results show that product/brand and celebrity match (M = 2.938, SD = 0.800, SK = 0.297) has the highest skewness, while credibility (M = 2.895, SD = 0.842, SK = 0.051) exhibits the lowest skewness. In terms of kurtosis, credibility (M = 2.895, SD = 0.842, K = –0.635) shows the highest value, while product/brand and celebrity match (M = 2.938, SD = 0.800, K =

0.026) has the lowest. The skewness and kurtosis for all constructs fall within ±2, indicating that the data exhibits univariate normality (George, 2011; Hair et al., 2013). Furthermore, all values of α are greater than 0.70, confirming the presence of internal consistency.

4.2. Instrument Validity and Reliability

We employ average variance extracted and composite reliability to assess convergent validity. The results are summarized in Table 3.

Table 3: Convergent Validity

Construct	Mean	SD	Composite Reliability (CR)	Average Variance Extracted (AVE)
Credibility	2.895	0.842	0.927	0.681
Meaning Transfer	2.432	0.765	0.896	0.811
Product/Brand Celebrity Match	2.938	0.800	0.892	0.734
Purchase Intention	2.432	0.529	0.833	0.628

Credibility (M = 2.895, SD = 0.842, CR = 0.927) has the highest composite reliability, while purchase intention (M = 2.432, SD = 0.529, CR = 0.833) has the lowest. Similarly, meaning transfer (M = 2.432, SD = 0.765, AVE = 0.811) shows the highest AVE, while purchase intention (M = 2.432, SD = 0.529, AVE = 0.628) has the lowest AVE. All composite reliability values exceed 0.7, and all AVE values are above 0.5, indicating the existence of convergent validity (Hair et al., 2013). This suggests that the items for each concept are closely correlated, with no item correlating with an external concept.

To establish discriminant validity, we use the criteria outlined by Fornell and Larcker (1981). Table 4 presents the summarized results and shows that the square root of AVE (in diagonal) for each construct is greater than the square of correlation of each pair. The presence of discriminant validity implies that all variables used in this research are distinct and unique. This means that each variable is different from the others, with no overlap among them, and there is no repetition of concepts in this research.

Table 4: Discriminant Validity

	Credibility	Meaning Transfer	Product/Brand Celebrity Match	Purchase Intention
Credibility	0.825			
Meaning Transfer	0.264	0.901		
Product/Brand Celebrity Match	0.407	0.246	0.857	
Purchase Intention	0.236	0.143	0.141	0.792

4.3. Structural Equation Modeling

Structural equation modeling (SEM) is applied using Smart PLS 3 to test the hypotheses. The summarized results are in Table 5, indicating that all hypotheses are supported.

Table 5: Statistical Results from SEM

	Beta	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Direct Effects					
Credibility->Purchase Intention	0.362	0.362	0.053	6.844	0.000
Meaning Transfer->Credibility	0.262	0.262	0.033	7.954	0.000
Meaning Transfer->Purchase Intention	0.254	0.255	0.052	4.888	0.000
Product/Brand Celebrity Match->Credibility	0.638	0.638	0.027	23.602	0.000
Product/Brand Celebrity Match->Meaning Transfer	0.496	0.497	0.035	14.215	0.000
Product/Brand Celebrity Match->Purchase Intention	0.376	0.378	0.042	8.905	0.000
Indirect Effects					
Product/Brand Celebrity Match->Meaning Transfer->Credibility	0.130	0.130	0.017	7.804	0.000
Meaning Transfer->Credibility->Purchase Intention	0.095	0.094	0.016	5.914	0.000
Product/Brand Celebrity Match->Meaning Transfer->Credibility->Purchase Intention	0.047	0.047	0.008	5.938	0.000
Product/Brand Celebrity Match->Credibility->Purchase Intention	0.184	0.184	0.030	6.103	0.000
Product/Brand Celebrity Match->Meaning Transfer->Purchase Intention	0.079	0.079	0.024	3.310	0.001

Figure 2 illustrates the relationships between items and their respective latent constructs: product/brand-celebrity match, credibility, meaning transfer, and purchase intention. The factor loadings for each item suggest the degree to which each item contributes to its construct. All items exhibit factor loadings above 0.8, except for one item related to purchase intention, which has a factor loading of 0.669.

Figure 2: Measurement Model

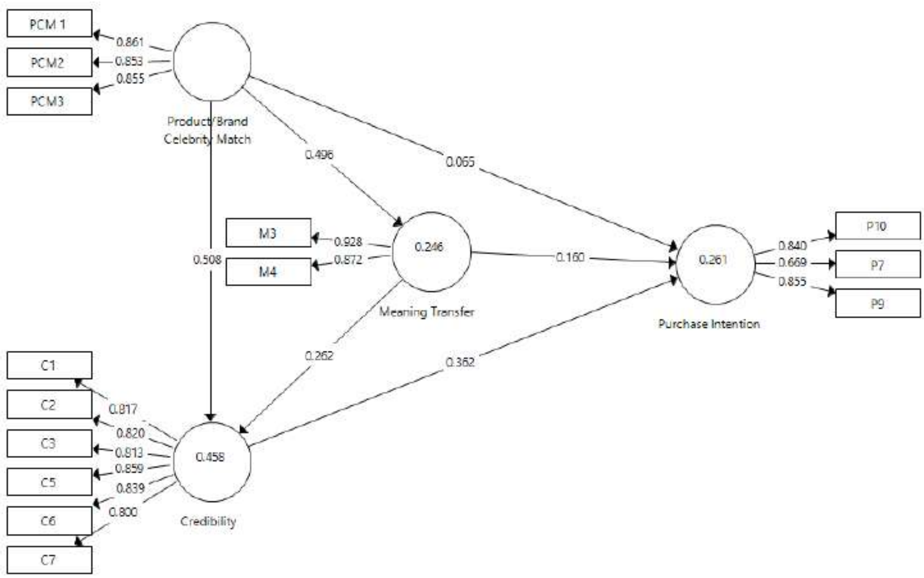
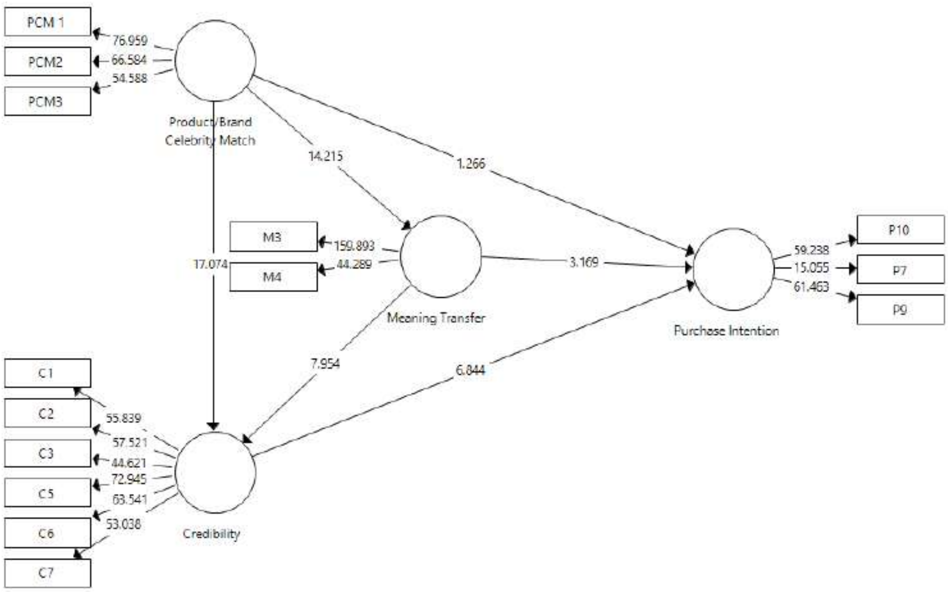


Figure 3 depicts the relationships between latent constructs: product/brand-celebrity match, credibility, meaning transfer, and purchase intention. The path coefficients indicate the strength of influence each construct has on the others. As shown in Figure 3, the relationships among the constructs are strong, with the most significant effect observed between product/brand-celebrity match and credibility.

Figure 3: Structural Model



5. Discussion of Findings

The results provide strong support for the hypotheses established during the literature review, demonstrating the connections between celebrity endorsement and purchase intention. More importantly, they highlight the role of meaning transfer as a significant factor in effective celebrity endorsements. All hypotheses were validated, and further discussion of these results follows below.

5.1. Credibility

Credibility is assessed through three sub-variables: attractiveness, trustworthiness, and expertise of the celebrity endorser. The findings reveal that all three sources of credibility positively influence consumers' intentions to purchase the endorsed product ($\beta = 0.362$, $t = 6.844$, $p < 0.05$). An endorser's credibility significantly impacts consumer purchase intentions and enhances the effects of celebrity match and meaning transfer on these intentions (Rifon et al., 2023; Zhang & Xu, 2024). Similar conclusions are reached by Teng et al. (2014), who emphasize that sources of credibility are crucial for persuasion and can trigger consumer purchase intentions towards endorsed products. Additionally, source credibility shapes consumer attitudes towards the brand/product, which in turn significantly affects purchase intentions. High-involvement consumers tend to focus on both the trustworthiness and attractiveness of the celebrity, while those with low involvement prioritize trustworthiness alone (Fam et al., 2023; Wang & Scheinbaum, 2017).

Modern consumers, who are highly influenced by social media, now perceive celebrities as symbols. Their purchase decisions can quickly be swayed by the credibility and relevance of a celebrity endorser, often relegating the product's features to secondary importance (Yendra et al., 2023; Zafar & Rafique, 2012). In this context, our results indicate that the endorser's credibility mediates the relationship between the product/brand-celebrity match and consumer purchase intention ($\beta = 0.184$, $t = 6.103$, $p < 0.05$). A stronger alignment between the product/brand and the endorser enhances the endorser's credibility in consumers' minds, fostering a positive inclination towards the product and increasing purchase intentions. Additionally, credibility positively mediates the beneficial effect of meaning transfer on purchase intention, suggesting that a credible endorser facilitates the process of meaning transfer in advertisements and positively influences the purchase of the endorsed product.

5.2. Product/Brand Celebrity Match

According to Adam and Hussain (2017), an effective match-up is determined by the degree of fit between the celebrity and the endorsed product. The celebrity should be compatible with and possess expertise related to the product. The product and celebrity match is critical for boosting purchase intentions. The effectiveness of the conveyed message relies on the alignment between the product and the celebrity endorsing it. Companies must ensure that the celebrity they choose to endorse their product embodies the appropriate personality, traits, characteristics, and expertise that align well with the product, thereby enhancing the message's impact and leaving a positive impression on consumers (Khan, 2018; Zhang & Xu, 2024).

This study's results show a positive relationship between product/brand-celebrity match and purchase intention ($\beta = 0.376$, $t = 8.905$, $p < 0.05$). Moreover, product/brand-celebrity match has the strongest positive influence ($\beta = 0.638$, $t = 23.602$, $p < 0.05$) on the credibility of the endorser. This suggests that a good match between the endorser and the product/brand enhances the credibility of the message conveyed by the endorser in the advertisement, which, in turn, increases the purchase intention for the endorsed product. It also indicates that the product/brand match with the celebrity is of utmost importance to consumers, with other variables being linked to it and mediating its effect on purchase intention.

5.3. Meaning Transfer

The results further indicate that meaning transfer positively impacts consumer purchase intention ($\beta = 0.254$, $t = 4.888$, $p < 0.05$). Consumers often believe that celebrities endorsing products, particularly cosmetics, will enhance their attractiveness and glamour (Adam & Hussain, 2017; Jun et al., 2023). In such cases, the attractiveness of the celebrity with cosmetic brands creates a balanced match, and the idea of looking attractive through the use of those brands is effectively transferred by the endorser, which also influences purchase intention for those brands (Rifon et al., 2023; Zhang & Xu, 2024).

The high relevance of the celebrity-product match leads to a significant level of meaning transfer for both the brand and the targeted consumer. Furthermore, meaning transfer offers a more comprehensive explanation for the effectiveness of celebrity endorsement. Most consumers tend to perceive cultural meanings in advertisements featuring celebrities they admire, associating the products with the celebrities' symbols and personas (Hussain & Khan, 2015). Thus, meaning transfer positively mediates the influence of product/brand-celebrity match on purchase intention ($\beta = 0.079$, $t = 3.310$, $p < 0.05$).

6. Conclusion

The aim of this study was to explore the factors of celebrity endorsement that significantly influence consumer purchase intention. The results suggest that the celebrity's credibility, the product/brand match-up with the celebrity, and the meaning transferred by the celebrity all positively influence consumers' purchase intention. Therefore, marketers in Pakistan should consider all three aspects when incorporating celebrity endorsement into their marketing and advertising campaigns. Notably, the product/brand and celebrity match has the strongest influence on the transfer of meaning in the intended message and on consumer purchase intention. Thus, it is recommended that marketers select endorsers who best align with the product being advertised to achieve the most effective outcomes from the endorsement campaign. The alignment between the endorser and the brand will maximize the campaign's effectiveness and enhance purchase intention.

These findings indicate that marketers and advertisers should avoid selecting endorsers who are merely popular at a given moment but have no connection to the brand being endorsed. Ignoring the match between the product/brand and the celebrity can lead to consumer dislike of the advertisement, potentially causing the entire campaign to backfire. This misalignment can create doubt in consumers' minds regarding the credibility of the information provided by the endorser, often resulting in a loss of meaning transfer due to diminished credibility and increased skepticism. For credibility, marketers and advertisers should consider the trustworthiness and expertise of the endorser, along with the attractiveness of the celebrity's appearance and personality.

Although this study provides valuable insights for both theory and practice, it has several limitations. For instance, this study does not incorporate any moderators, which may either weaken or strengthen the explored relationships. Future research should examine the effect of moderators. Furthermore, no specific stimulus was used in the current research, which might provide additional contextualization to the results. Future studies should focus on analyzing changes in results based on different stimuli. Moreover, the current research did not investigate differences in urban and rural preferences, intentions, and behaviors. Therefore, future studies could analyze these results across different areas, cities, and geographical contexts. Lastly, this study focused solely on the perceptions and opinions of young consumers. Future research can build on this by incorporating various age groups to assess how the observed relationships differ.

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Accounting without a General Ledger: Insights from Micro, Small and Medium Enterprises in Pakistan

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Abstract: *This study examines the formality of accounting practices within Pakistan's micro, small and medium enterprises (MSMEs). Data was gathered from 110 MSMEs located in Karachi, Pakistan. The research focused on eight dimensions of accounting systems: chart of accounts, payroll records, receipt and payment records, party ledgers, employee time records, segregation of duties, documentary support, and budgetary control. These dimensions were analyzed in relation to four firm-level attributes: organization type, firm size, firm age, and type of business. The results indicate that most firms do not utilize these accounting dimensions, a finding that is consistent across various firm ages and business types. However, firm size shows some association with the utilization of four of the eight dimensions. The implications of these findings are discussed in the context of agency and institutional theories, and some policy recommendations are provided. Future research could use this exploratory study to investigate the motivations and structural barriers that influence the adoption or avoidance of formal accounting practices by MSMEs, as well as how these enterprises use accounting information and the challenges they encounter.*

Keywords: Accounting practices, accounting records, SMEs, determinants of formal accounting practices, entrepreneurial ventures.

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Accounting without a General Ledger: Insights from Micro, Small and Medium Enterprises in Pakistan

1. Introduction

Entrepreneurial ventures typically begin as micro or small businesses. In Pakistan, micro-enterprises are usually operated by self-employed individuals or those with fewer than ten employees, not including seasonal workers (State Bank of Pakistan, 2012). Small enterprises are defined as businesses that employ between 10 and 35 individuals. Collectively, micro, small and medium enterprises (MSMEs) include all businesses with fewer than 250 employees. These enterprises account for nearly 90 percent of all businesses in Pakistan, contributing approximately 40 percent to the GDP and employing 80 percent of the non-agriculture workforce (Small and Medium Enterprise Development Authority, 2018).

Despite their significant potential for economic development, there has been limited academic research on MSMEs, particularly regarding their accounting practices. There is a need for research into the antecedents and consequences of accounting and financial reporting in MSMEs for several reasons. First, MSMEs differ from larger enterprises in important ways (Asaduzzaman, 2016). Most are established as sole proprietorships or partnerships, which are non-corporate entities, whereas most compliance regulations are designed for corporate entities. Consequently, MSMEs often fall below the compliance threshold, allowing them to avoid minimum accounting practices mandated by regulatory frameworks. Second, nearly 50 percent of MSMEs fail within the first five years, primarily due to poor cash flow management, lack of demand and insufficient capital (USA Link System, 2023). These challenges could potentially be addressed through timely access to relevant information. Third, the personal involvement of business owners in daily operations can lead to the perception that accounting information systems, even manual ones, are unnecessary. This perception challenges the assumption that accounting is vital and required (Ibrahim et al., 2020). In this context, some scholars argue that MSMEs must recognize the importance of formal accounting information systems, as these systems can significantly impact financial performance, particularly return on investment (Asaduzzaman, 2016). Furthermore, studying accounting systems and practices in MSMEs is particularly crucial in developing and underdeveloped countries, where a larger number of businesses operate informally and are undocumented.

Do MSMEs need accounting? The primary purpose of accounting is to support decision-making; MSMEs are no exception. Without accurate and timely information, their decision-making is likely to be suboptimal, potentially hindering growth and sustainability. While opinions differ on the extent to which MSMEs should invest in formal accounting, previous literature underscores its importance. Formal accounting systems and access to formal financial information have been linked to higher growth and performance in small and medium enterprises (SMEs) (Esmeray, 2016; Ismail & King, 2005). This growth is partly due to the improved access to finance that formal accounting provides for MSMEs. In the absence of formal accounting, MSMEs often encounter difficulties in accessing financial markets, which limits their expansion opportunities (Kung'u, 2011).

To address gaps in the existing research, this study investigates the accounting practices of entrepreneurial MSMEs in Pakistan. Specifically, we explore two key research questions: First, what formal accounting practices that enable the availability of financial information are adopted by MSMEs in Pakistan? Second, how do these practices vary across different firm-level characteristics such as organization type, firm size, firm age and type of business? Additionally, this study focuses on entrepreneurial entities—ventures established from the ground up by their current owners, rather than inherited or family businesses.

This study differs from previous research conducted in Pakistan (see, for example, Latif et al., 2023; Zehra & Ahmed, 2019) in several ways. First, it emphasizes the adoption of formal accounting practices that facilitate the availability of financial information, rather than focusing on how that information is used for decision-making, the latter being the primary objective of many prior studies. The absence of formal accounting practices often limits the availability of clear and timely information, negatively affecting decision-making effectiveness and enterprise performance. Thus, this study takes a more foundational approach. Second, it specifically targets entrepreneurial MSMEs, broadening the scope of the research. Third, it examines a combination of four firm-level characteristics to assess their association with the adoption of formal accounting practices—an approach that has not been previously explored in the context of MSMEs in Pakistan. As there is currently a lack of research on the types of formal accounting practices employed by MSMEs in Pakistan, the quantitative data produced by our research paves the way for more in-depth qualitative studies that can investigate the motivations and challenges associated with adopting formal accounting practices.

The rest of this study is structured as follows: Section 2 provides a review of the literature, Section 3 discusses the research methodology, Section 4 presents the results and discussion, and Section 5 outlines the conclusion, limitations and future research directions.

2. Literature Review

2.1. Accounting Practices in MSMEs

Scholars have examined the adoption of accounting practices by MSMEs worldwide and identified significant variations across countries and regions. In developed countries, regulatory compliance typically necessitates the use of formal accounting practices. Consequently, research in these nations tends to focus more on analyzing and utilizing accounting information for decision-making, shifting from financial accounting to management accounting, rather than on the creation and development of the information itself (see Armitage et al., 2016; McMahon, 2001).

In contrast, the situation in developing and underdeveloped countries is different. With fewer regulatory frameworks in place, particularly for micro and small enterprises, formal and detailed accounting information is often not maintained. For instance, Fatoki (2012) surveyed micro-enterprises in South Africa and found that while these businesses record sales and purchases, they do not maintain a complete set of accounts. Similarly, in Kenya, Busieney (2012) observes that SMEs do not use essential accounting services, even to meet minimum legal compliance. This issue largely stems from a lack of knowledge and competence, along with the absence of mechanisms to enforce legal requirements. In Ghana, Zotorvie (2017) finds that firms fail to keep proper accounting records due to insufficient accounting knowledge and the high costs of hiring accounting professionals. Other studies from Zimbabwe also highlight the lack of accounting knowledge as a primary reason for the absence of accounting information systems (see Maseko & Manyani, 2011; Nyathi et al., 2018). Furthermore, Ikem et al. (2012) note that due to the lack of formal accounting practices and the unavailability of quality accounting information, SMEs in Nigeria struggle to access financial markets.

In the Asian context, the findings are mixed. Bui et al. (2020) find that nearly all SMEs surveyed in Vietnam apply management accounting techniques, indicating the presence of financial accounting information and formal accounting practices. Similar findings are reported in Malaysia, where most SMEs prepare monthly management accounting reports (Isa et al., 2008). However, the application of these techniques varies across SMEs based on their individual characteristics (Ahmad, 2017). For example, in

Indonesia, SMEs exhibit a wide range of accounting practices, with 30 percent lacking even formal sales records whereas 35 percent preparing comprehensive financial statements (Kurniawati & Hermawan, 2012). In a qualitative study conducted in Gaza, Alattar et al. (2009) find that in the absence of an enforceable regulatory mechanism for financial reporting among micro and small enterprises, the adoption of formal accounting practices largely depends on the knowledge, skills, and experience of the managers or owners. Similarly, other studies confirm the lack of formal accounting practices among the majority of SMEs surveyed in Jordan and Bangladesh (Asaduzzaman, 2016; Smirat, 2013).

2.2. Determinants of Formal Accounting Practices

Both firm-level and contextual characteristics have been studied for their potential relationship with formal accounting practices. One key firm-level characteristic identified as a determinant of accounting practices is firm size. Ahmad (2017) notes that firm size significantly influences the adoption of more sophisticated management accounting practices in Malaysian firms. In smaller firms, the accounting function is simpler due to fewer suppliers, customers and transactions (Alattar et al., 2009). Firm size has also been identified as an important determinant in studies conducted in Vietnam (Bui et al., 2020), Zimbabwe (Dlamini, 2022), South Africa (Msomi et al., 2019), and Indonesia (Prihastiwi & Sholihin, 2018). Additionally, Nguyen et al. (2019) find that firm size mediates the relationship between production and business process characteristics and the application of management accounting practices. However, some studies, such as that by Puspita and Pramono (2019), do not find firm size to be a relevant factor.

Another firm-level characteristic relevant in some studies is firm age. Msomi et al. (2019) and Bui et al. (2020) observe a correlation between firm age and the adoption of management accounting practices. In contrast, Puspita and Pramono (2019) and Santosa and Wulandari (2019) find that firm age does not significantly impact the adoption of formal accounting practices. Furthermore, while technology adoption is often seen as an outcome, it has also been recognized as an important determinant in the adoption of accounting practices in SMEs (Msomi et al., 2019).

The personal characteristics of SME owners/managers are also relevant to the formality of accounting practices and the utilization of accounting information for decision-making. Kahsay and Zeleke (2019) find that the education and age of those managing SMEs are positively and significantly related to the adoption of accounting tools and techniques. Specifically, accounting knowledge, competence and personal experience are identified as major determinants of formal management accounting practices (Alattar et al., 2009). Conversely, a lack of such knowledge and skills is associated with inadequate accounting records (Nelson & Onias, 2011). While some researchers link the adoption of accounting tools to the financial literacy and awareness of SME owners/managers (Dlamini, 2022; Nguyen et al., 2019), others emphasize the collaborative efforts of owners/managers working alongside trained staff (Prihastiwi & Sholihin, 2018) rather than purely accounting knowledge (Puspita & Pramono, 2019).

Regarding contextual factors, the socioeconomic environment—particularly competition—has been identified as a significant determinant of the adoption of formal accounting practices (Alattar et al., 2009). Increased market competition necessitates cost reduction for survival, making reliable accounting information essential. However, Nguyen et al. (2019) argue that competition has a weaker influence on the adoption of accounting practices compared to firm size and other firm-level attributes. Additionally, while access to finance through formal financial institutions is often considered important for smaller firms' adoption of accounting practices, some studies report it to have an insignificant impact (Kahsay & Zeleke, 2019).

The government's active role, through subsidies and regulatory measures, has also been recognized as a crucial determinant (Msomi et al., 2019). Furthermore, some authors suggest that although firms acknowledge the need for accounting information, they may choose not to adopt formal practices due to the high costs associated with hiring accounting experts (Zotorvie, 2017). Lastly, Bui et al. (2020) observe that the prevalence of accounting practices varies significantly across different sectors of the economy.

2.3. SME Accounting Practices in Pakistan

In Pakistan, limited research exists on accounting practices and their determinants in MSMEs. For example, Zehra and Ahmed (2019) find that SMEs in Pakistan typically utilize traditional management accounting practices for their costing and pricing decisions. An exploratory study by Bakhsh et al. (2019) highlights the distinction between small and medium enterprises in this regard: medium enterprises tend to adopt modern, sophisticated practices, whereas small enterprises rely primarily on traditional tools such as budgeting and costing systems.

When examining determinants, Williams et al. (2016) find that firm-level and personal characteristics are more relevant predictors of the formality or informality of accounting practices than contextual and environmental factors. Specifically, more formal practices are associated with firms led by women as well as by older, educated entrepreneurs with higher incomes, along with businesses that have been established longer (firm age). In a recent study on the role of management accounting practices in economic sustainability, Latif et al. (2023) identify accounting literacy as a key determinant influencing the use of management accounting practices.

These studies focus on a rather high-level utilization of accounting information (Zehra & Ahmed, 2019), and determinants with respect to formality in accounting practices in a more aggregate pattern (Latif et al., 2023; Williams et al., 2016). There remains a gap about the type and composition of formal accounting practices and their relationships with firm-level attributes, which the current study has attempted to explore.

3. Research Methodology

As an exploratory study focusing specifically on formal accounting practices rather than motivations, we employ a quantitative approach utilizing the survey method. This approach is appropriate for two reasons. First, it enables us to reach a broader sample, enhancing the external validity of the study. Second, the survey is easy to administer by accounting students because its vocabulary is simple and clear.

3.1. Participants and Data Collection

Data was collected from the owners, partners or managers of 120 entrepreneurial MSMEs in Karachi that were established between 2001 and 2018. We used the convenience sampling method, meaning that respondents were selected based on ease of access. Students enrolled in an accounting course conducted the data collection as part of a term project and received academic credit for their efforts. In nearly half the cases, data was collected in person; where personal meetings were not feasible, data was collected via telephone.

3.2. Research Instruments

Various metrics can measure the formality of accounting practices. One critical metric for capturing comprehensive formal accounting is the maintenance of a chart of accounts and a general ledger, particularly in underdeveloped and developing countries where MSMEs often lack formality. Chelimo and Sopia (2014) note that maintaining a formal general ledger not only facilitates the preparation of complete financial statements but also promotes growth. Maseko and Manyani (2011) emphasize that SMEs should document records of receivables and payables, payroll, non-current assets, and cash receipts and payments. From a future-oriented perspective, maintaining budgets (Maelah & Yadzid, 2018) and implementing other forms of internal control (Ntim et al., 2014; Tazilah & Hussain, 2015) are essential for effective financial management strategies in MSMEs.

Based on these fundamental aspects of formal accounting practices, we identify five key ledgers for record-keeping. Additionally, we examine two process dimensions that serve as critical internal control measures and one control dimension, resulting in the following eight dimensions: (a) chart of accounts, (b) payroll records, (c) receipt and payment records, (d) parties' records (debtors, projects, creditors), (e) employee time and attendance records, (f) segregation of duties, (g) documentary support for transactions, and (h) budgetary control.

As a result, this study employs the accounting system questionnaire (National Institute of Food and Agriculture, 2016) previously used in other studies, which encompasses a total of ten dimensions, including all eight mentioned above. Although the questionnaire was originally developed for non-profit organizations, its structure and question order are well-suited for use in commercial organizations. Additionally, we gathered profiling information about the participating business ventures and their owners.

4. Empirical Results

Out of 120 participants from whom data was collected, ten cases were removed. Seven cases were excluded due to duplication, as some students had inadvertently collected data from the same organization (though mostly not from the same individual). Additionally, two cases were removed because of their size, and one case was excluded because the participant did not provide the complete information required in the survey for confidentiality reasons.

As the study is exploratory, descriptive statistics and cross-tabulations were generated based on firm size, sector and age. This analysis helped us understand the accounting systems employed in enterprises categorized by age, size and sector. Inferential statistics were also employed to examine the associations among firm type, size, age and industry concerning the eight dimensions being explored. Since random sampling procedures were not utilized, a non-parametric statistical test (chi-square) was applied.

4.1. Overview of Respondents

Table 1 presents the frequency distribution of the sample based on the type of organization and broad industry classification. The majority of ventures (87.3 percent) were sole proprietorships, while partnerships constituted 9.1 percent, and only a few (3.6 percent) were incorporated businesses. Of the 110 ventures analyzed, 64 were in the services sector (58.2 percent), followed by 28 ventures involved in some form of conversion business (25.5 percent), and 18 were in trading (16.4 percent).

Table 1: Sample Frequency Distribution: Organization Type and Industry

Organization type			
Sole proprietorship	**Partnership**	**Incorporated**	**Total**
96	10	4	110
87.3%	9.1%	3.6%	100%
Industry			
Services	**Conversion**	**Trade**	**Total**
64	28	18	110
58.2%	25.5%	16.4%	100%

The distribution of ventures by size and age is shown in Table 2. The sample includes a diverse range of ages, from a few months to 16 years. Notably, 67 ventures (60.9 percent) were established after 2013. Regarding size, the majority of ventures (50 percent) have between 6 and 25 employees. Additionally, ten ventures (9.1 percent) operate as freelancers with no other employees. Although there are only 14 ventures with more than 25 employees, their sizes vary significantly, with some employing up to 300 people. Consequently, these larger ventures are grouped together, representing approximately 12.7 percent of the total sample.

Table 2: Sample Frequency Distribution: Venture Age and Size

Age (no. of years)					
< 2	2 to 4	4 to 6	6 to 8	> 8	Total
41	26	13	13	15	108*
37.3%	23.6%	11.8%	11.8%	13.6%	98.2%*
Size (no. of employees)					
1	1 to 5	6 to 25	25 +		Total
10	31	55	14		110
9.1%	28.2%	50%	12.7%		100%

Note: * = data not available for two ventures.

Table 3 illustrates the frequency distribution of accounting systems (manual, computerized, mixed) used by the surveyed ventures. Most ventures (48.2 percent) utilize a computer application to support their manual accounting records, while only a small percentage (15.5 percent) rely on fully automated accounting systems.

Table 3: Sample Frequency Distribution: Accounting System Employed

Manual	Mixed*	Automated	Total
40	53	17	110
36.4%	48.2%	15.5%	100%

Note: * = includes use of spreadsheets for certain accounting records.

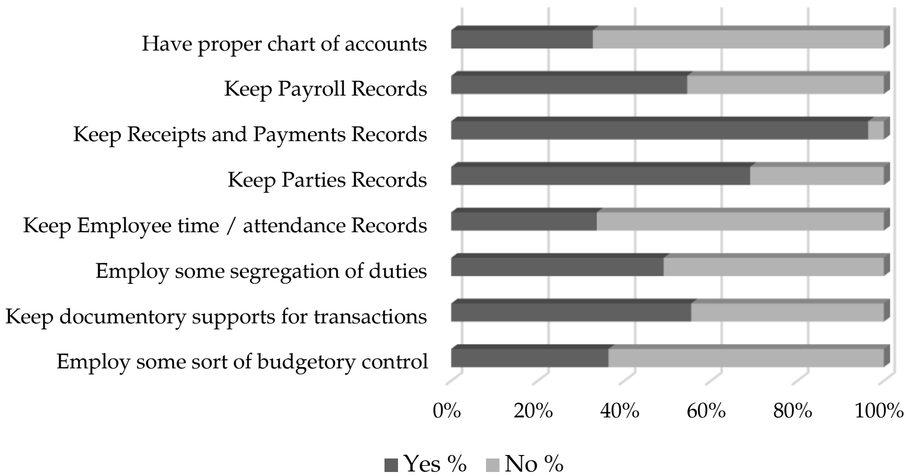
4.2. Research Question 1: Formal Accounting Practices

Table 4 presents eight key dimensions of the accounting systems explored in the survey. Only 32.7 percent of the surveyed ventures maintain a proper chart of accounts for their accounting needs. The highest level of record-keeping was reported for receipts and payments (96.4 percent), followed by records of parties involved (69.1 percent). Additionally, the data indicates that most ventures do not utilize a double-entry accounting system (formal general ledger). Figure 1 illustrates these findings, depicting the frequency percentages for each dimension surveyed. Subsequently, these findings are analyzed in relation to organization type, industry, firm size and age.

Table 4: Key Findings Regarding Accounting Information Systems

ID	Accounting component/dimension	Yes	Yes %	No	No %	Total
COA	Have a proper chart of accounts	36	32.7%	74	67.3%	110
Payroll	Keep payroll records	60	54.5%	50	45.5%	110
R&P	Keep receipts and payments records	106	96.4%	4	3.6%	110
Parties	Keep parties' records	76	69.1%	34	30.9%	110
TimeRec	Keep time/attendance records	37	33.6%	73	66.4%	110
SOD	Employ some segregation of duties	54	49.1%	56	50.9%	110
Doc	Keep documentary supports	61	55.5%	49	44.5%	110
Budg	Employ some sort of budgetary control	40	36.4%	70	63.6%	110

Figure 1: Accounting Dimensions



4.3. Research Question 2: Firm Characteristics and Formal Accounting Practices

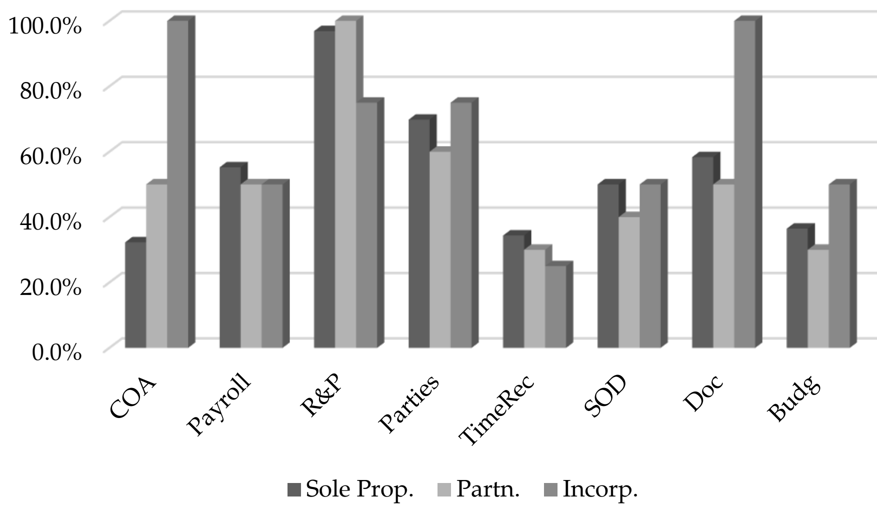
4.3.1. Organization Type and Accounting Systems

Table 5 gives data for the eight accounting dimensions analyzed by organization type, which includes three categories: sole proprietorship, partnership and incorporated ventures. Figure 2 compares the eight dimensions across these three groups. As anticipated, the results show that incorporated ventures exhibit the highest use of nearly all accounting system dimensions, likely due to their obligation to comply with legal accounting and record-keeping regulations.

Table 5: Accounting Information System Dimensions and Organization Type

Organization type	**Sole proprietorship (n = 96)**		**Partnership (n = 10)**		**Incorporated (n = 4)**	
Item ID	Yes	%	Yes	%	Yes	%
COA	31	32.3%	5	50.0%	4	100.0%
Payroll	53	55.2%	5	50.0%	2	50.0%
R&P	93	96.9%	10	100.0%	3	75.0%
Parties	67	69.8%	6	60.0%	3	75.0%
TimeRec	33	34.4%	3	30.00%	1	25.00%
SOD	48	50.0%	4	40.00%	2	50.00%
Doc	56	58.3%	5	50.00%	4	100.00%
Budg	35	36.5%	3	30.00%	2	50.00%

Figure 2: Accounting Information System Dimensions by Organization Type



A chi-square test of independence is conducted for each of the eight accounting dimensions to determine if organization type is related to any dimension. While it is generally expected that incorporated businesses exhibit proper accounting and record-keeping practices (as indicated by the sample data in Table 5), the overall results are insignificant at the 5 percent level (Table 6), suggesting that organization type within MSMEs is not correlated with any of the eight accounting dimensions. However, these statistics should be interpreted cautiously due to the very small number of observations for incorporated ventures in the sample (only four).

Table 6: Chi-Square Test Results for Organization Type and Accounting Dimensions

Dimension	Value	DF	p value
COA	3.309	2	0.191
Payroll	0.134	2	0.935
R&P	5.659	2	0.059
Parties	0.474	2	0.789
TimeRec	0.216	2	0.897
SOD	0.364	2	0.834
Doc	5.422	2	0.066
Budg	0.497	2	0.780

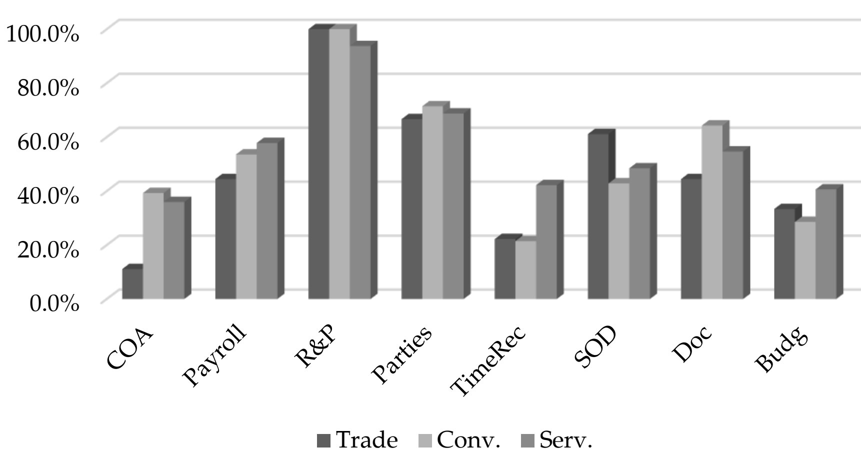
4.3.2. Industry and Accounting Systems

Table 7 presents the results of the eight accounting dimensions analyzed by three broad industry categories: trade, conversion and service. Figure 3 compares these dimensions by industry type and indicates that it is not possible to distinguish between accounting record keepers and non-keepers based solely on broad industry classifications.

Table 7: Accounting Information System Dimensions and Broad Industry Classification

Industry	Trade (n = 18)		Conversion (n = 28)		Service (n = 64)	
Item ID	**Yes**	**%**	**Yes**	**%**	**Yes**	**%**
COA	2	11.1%	11	39.3%	23	35.9%
Payroll	8	44.4%	15	53.6%	37	57.8%
R&P	18	100.0%	28	100.0%	60	93.8%
Parties	12	66.7%	20	71.4%	44	68.8%
TimeRec	4	22.2%	6	21.4%	27	42.2%
SOD	11	61.1%	12	42.9%	31	48.4%
Doc	8	44.4%	18	64.3%	35	54.7%
Budg	6	33.3%	8	28.6%	26	40.6%

Figure 3: Accounting Information System Dimensions by Broad Industry Classification



A chi-square test of independence is also performed for each of the eight accounting system dimensions to assess whether broad industry classification is related to any dimension. The results are insignificant at the 5 percent level (Table 8), indicating that broad industry type classification does not affect the maintenance of accounting system records in MSMEs.

Table 8: Chi-Square Test Results for Industry and Accounting Dimensions

Dimension	Value	DF	p value
COA	4.667	2	0.097
Payroll	1.027	2	0.598
R&P	2.983	2	0.225
Parties	0.125	2	0.94
TimeRec	5.016	2	0.081
SOD	1.487	2	0.475
Doc	1.783	2	0.41
Budg	1.308	2	0.52

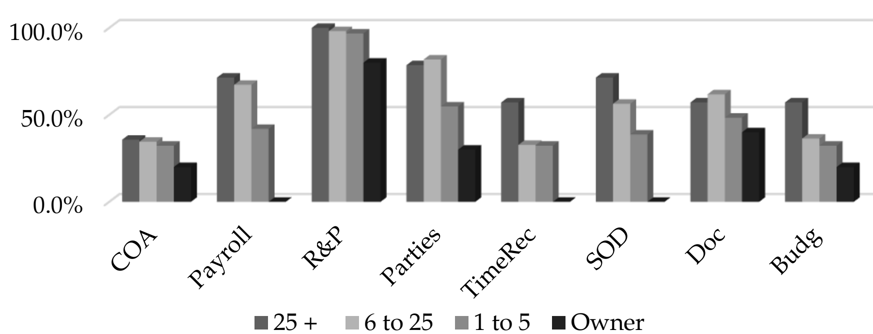
4.3.3. Firm Size and Accounting Systems

Table 9 presents the results of the eight accounting dimensions analyzed by firm size, as determined by the number of employees (categorized into four groups; see Table 2). Figure 4 compares these eight dimensions across the four groups. As expected, larger firms maintain more accounting system dimensions than their smaller counterparts. Additionally, sole proprietors (n = 10) have the least comprehensive accounting records across all eight dimensions.

Table 9: Accounting Information System Dimensions and Firm Size

No. of employees	25 + (n = 14)		6 to 25 (n = 55)		1 to 5 (n = 31)		1 (n = 10)	
Item ID	Yes	Yes %	Yes	Yes %	Yes	Yes %	Yes	Yes %
COA	5	35.7%	19	34.5%	10	32.3%	2	20.0%
Payroll	10	71.4%	37	67.3%	13	41.9%	0	0.0%
R&P	14	100.0%	54	98.2%	30	96.8%	8	80.0%
Parties	11	78.6%	45	81.8%	17	54.8%	3	30.0%
TimeRec	8	57.1%	18	32.7%	10	32.3%	0	0.0%
SOD	10	71.4%	31	56.4%	12	38.7%	0	0.0%
Doc	8	57.1%	34	61.8%	15	48.4%	4	40.0%
Budg	8	57.1%	20	36.4%	10	32.3%	2	20.0%

Figure 4: Accounting Information System Dimensions by Firm Size



A chi-square test of independence is conducted for each of the eight accounting dimensions to determine if there is a relationship between firm size and each dimension, as detailed in Table 10. This analysis reveals a significant relationship in four of the dimensions ($p < 0.05$), indicating that firm size is associated with the maintenance of certain accounting system dimensions: payroll records, receipt and payment records, parties' ledgers, and segregation of duties.

Firms with a higher number of employees are expected to maintain payroll records due to their larger staff. Similarly, larger firms have more flexibility to implement segregation of duties than smaller firms, and tend to maintain accurate parties' ledgers as well as receipt and payment records. However, no significant relationship is found in the other four dimensions. One of these dimensions, documentary support, is relatively well observed across all firm size categories, while the other three dimensions—chart of accounts, employee time records and budgetary control—are the least observed. Consequently, no distinctions can be made regarding firm size in these four dimensions.

Table 10: Chi-Square Test Results: Firm Size and Accounting System Dimensions

Dimension	Value	DF	p value
COA	0.878	3	0.831
Payroll	19.191	3	0.000*
R&P	8.704	3	0.034*
Parties	14.865	3	0.002*
TimeRec	6.106	3	0.111
SOD	11.41	3	0.010*
Doc	2.511	3	0.473
Budg	3.995	3	0.262

4.3.4. Firm Age and Accounting Systems

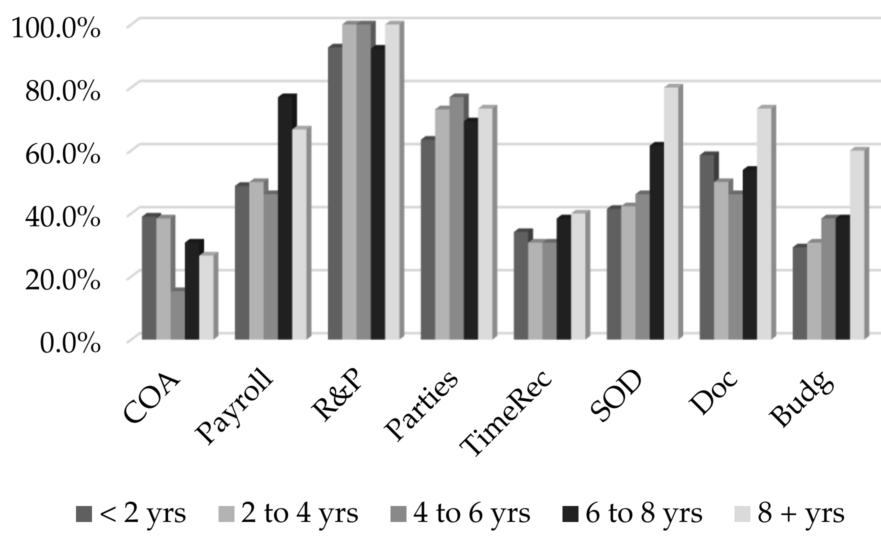
The impact of firm age on accounting systems presents competing theoretical perspectives. On the one hand, older firms may be expected to maintain more comprehensive accounting system requirements due to their greater experience and awareness of the importance of proper accounting. On the other hand, newer firms led by younger and relatively educated individuals may also excel in accounting and record keeping.

Table 11 gives the results of the eight accounting dimensions analyzed by firm age. Figure 5 compares the eight dimensions across five age groups. As shown in Figure 5, only two dimensions—segregation of duties and budgetary control—appear to be associated with firm age, while no major differences were observed among the five age groups in the remaining six dimensions.

Table 11: Accounting Information System Dimensions and Firm Age

Firm age	< 2 years (n = 41)		2–4 years (n = 26)		4–6 years (n = 13)		6–8 years (n = 13)		8+ years (n = 15)	
Item ID	Yes	< 2 yrs	Yes	2–4 yrs	Yes	4–6 yrs	Yes	6–8 yrs	Yes	8+ yrs
COA	16	39.0%	10	38.5%	2	15.4%	4	30.8%	4	26.7%
Payroll	20	48.8%	13	50.0%	6	46.2%	10	76.9%	10	66.7%
R&P	38	92.7%	26	100.0%	13	100.0%	12	92.3%	15	100.0%
Parties	26	63.4%	19	73.1%	10	76.9%	9	69.2%	11	73.3%
TimeRec	14	34.1%	8	30.8%	4	30.8%	5	38.5%	6	40.0%
SOD	17	41.5%	11	42.3%	6	46.2%	8	61.5%	12	80.0%
Doc	24	58.5%	13	50.0%	6	46.2%	7	53.8%	11	73.3%
Budg	12	29.3%	8	30.8%	5	38.5%	5	38.5%	9	60.0%

Figure 5: Accounting Information System Dimensions by Firm Age



The chi-square test of independence is conducted for each of the eight dimensions of accounting systems to determine their relationship with firm age. The results for all eight dimensions are insignificant at the 5 percent level, as presented in Table 12. However, segregation of duties (SOD) shows marginal significance at the 10 percent level. We can conclude that firm age is not associated with the maintenance of a proper accounting information system.

Table 12: Chi-Square Test Results: Firm Age and Accounting System Dimensions

Dimension	Value	DF	p value
COA	4.149	5	0.528
Payroll	4.667	5	0.458
R&P	4.309	5	0.506
Parties	1.653	5	0.895
TimeRec	1.57	5	0.905
SOD	9.947	5	0.077
Doc	5.37	5	0.372
Budg	5.075	5	0.407

4.4. Discussion of Findings

The first research question aimed to explore the accounting practices of MSMEs, focusing on the eight core dimensions of record-keeping, processes and controls. Of these, the chart of accounts (consequently double entry accounting with formal general ledger) was the least adopted by the surveyed MSMEs, while receipt and payment records—specifically cash-basis single-entry accounting—were the most commonly used. Regarding the four firm-level characteristics in research question 2, only firm size was associated with four of the eight accounting practices. In contrast, firm age, organization type and sector did not show significant associations.

These findings align with the literature on MSMEs in developing and underdeveloped countries. While earlier studies have explored formal accounting processes less extensively, the literature on management accounting practices adoption in MSMEs shows results consistent with this study. Another inference from our study is that MSMEs may not adopt management accounting practices due to a lack of information typically generated through formal financial accounting processes, which many of these businesses have not implemented.

These findings can be interpreted through agency theory (Jensen & Meckling, 1976). In MSMEs, where owners are often closely involved with managers or serve as managers themselves, the agency problem is relatively minimal, resulting in lower agency costs. Consequently, the need for control mechanisms, such as accounting information, diminishes. In contrast, larger firms exhibit a greater need for accounting practices, likely due to more significant agency issues arising from the separation of ownership and management. This is particularly evident in the segregation of duties, which is more common in larger firms than in smaller ones. From this perspective, accounting can be viewed as a need-based tool that firms utilize and invest in when they recognize a requirement for increased control and oversight.

These findings can also be understood through the lens of institutional theory (DiMaggio & Powell, 1983). Smaller firms experience less pressure from formal institutional frameworks, whereas larger firms are more constrained by these structures. This difference arises from the varying number of stakeholders; smaller firms typically have fewer stakeholders, while larger firms have many. Consequently, larger firms encounter greater regulatory pressures and higher stakeholder expectations, resulting in a stronger focus on formal requirements and the adoption of standardized accounting practices.

While the study has certain limitations, it carries important policy implications. We recommend that comprehensive national studies be conducted and funded by policymakers (for example, the Planning Commission in Pakistan or other relevant stakeholders) to assess the state of formal accounting practices and the factors influencing their adoption. Although general recommendations can be made, such as enforcing or incentivizing formal documentation and accounting, it is crucial to first determine whether these actions will yield significant benefits or merely increase the costs of doing business. Additionally, regulators and organizations that support MSMEs, such as the Trade Development Corporation and the Small and Medium Enterprise Development Authority (SMEDA), should consider implementing training and capacity-building programs for entrepreneurs. They should also promote digital accounting solutions by providing regulatory and optional support systems.

Furthermore, professional accounting bodies such as the Institute of Chartered Accountants of Pakistan (ICAP) and the Institute of Cost and Management Accountants of Pakistan (ICMAP) should proactively initiate projects aimed at reaching and supporting MSMEs, particularly those facing survival issues. These initiatives should focus on establishing a support system based on reliable accounting practices and information. We recognize that many business owners avoid automation and formalization, perceiving it as a threat of exposure to regulatory and tax compliance authorities, which are often viewed as unfriendly to business, especially in countries such as Pakistan.

Large-scale industries contribute only a small portion to overall economic development. In contrast, entrepreneurial ventures, micro-enterprises and SMEs constitute the majority of economic activity and serve as the backbone of the economy. Professional accountants should regard addressing the needs of these smaller businesses as a responsibility rather than a favor. Adopting an institutional and proactive approach to this issue may more effectively support their growth and sustainability.

5. Conclusion

This study examines the accounting information system practices of MSMEs. Eight key dimensions of accounting systems were identified and analyzed. Unlike previous studies that focus on management accounting practices in SMEs, this study emphasizes the type and composition of accounting information rather than its practical application. This perspective adds depth to the existing research that concentrates on the functional use of accounting information. In particular, the focus on generating and accumulating accounting knowledge sheds light on why SMEs often do not utilize sophisticated management accounting practices for decision-making. A significant underlying factor appears to be a lack of foundational accounting practices necessary for generating essential information.

The results indicate that most firms do not implement these accounting system dimensions, regardless of their age, type or industry. While simpler cash-basis practices, such as recording receipts and payments, are commonly adopted, more comprehensive practices, including formal ledgers and associated sub-ledgers, are largely absent. We find that firm size is linked to the adoption of four out of the eight dimensions, suggesting that close managerial involvement in smaller firms diminishes the need for formal accounting controls. This finding is particularly relevant for policymakers and practitioners; customizing support initiatives based on firm size could improve adoption rates.

The study has certain limitations. It uses convenience sampling, which affects the external validity of the findings. Additionally, we have selected accounting practices or dimensions based on their ability to generate information in general ledgers and sub-ledgers. Non-parametric testing was employed for data analysis. Future research could explore specific areas to enhance the findings of this study. Investigating the motivations and structural barriers that influence MSMEs' adoption or avoidance of formal accounting practices could yield practical recommendations to promote the integration of structured accounting processes. Furthermore, examining additional relevant dimensions, such as tax compliance, banking relationships and financial performance, could provide further insights into the factors that encourage or hinder the use of accounting systems in MSMEs.

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