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International Journal of Academe and Industry Research (IJAIR) is an open-access peer-reviewed quarterly journal focused on business education, industry research and the connection between them. The interconnectedness of the industry and academic institutions needs a platform that aligns their respective research needs. From the academic perspective, the business-related program management and the teaching and learning had been dramatically influenced by the industry trends and needs, collaborative approaches and internationalization. From there comes the indispensable role of the industry as they become partners to the academic institutions in producing quality workforce and entrepreneurs. Along these areas are the interesting topics for academic and industry researchers.

The journal employs rigorous double-blind review to ensure quality publications. Authors receive comment through feedforward communication approach. It is the prime objective of the reviewers to help authors improve the quality of the papers. As the journal promotes internationalization and collaboration, the multi-dimensional perspectives of the author and reviewers add high value to the research article. Moreover, the journal has solid support system for copyediting and formatting. The journal ensures that the research articles are within the standards of international publication.

It publishes high quality research papers that uses quantitative, qualitative or mixed methods. The journal targets a diverse spectrum of readers including academic scholars and industry experts. It focuses on local, regional and global issues on business education and industry. It also fosters academe and industry linkage and collaboration.

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- Current issues and trends in business education such as experiential learning, work training, community immersion, technical education and the 21st century skills;
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- Teaching and learning, curriculum development and student experience in the business-related and industry-inclined programs;
- Development and application of the 21st century skills;
- Assessment of program quality, institutional services and student satisfaction;
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- Benchmarking, institutional and program accreditation and institutional quality management;
- Leadership and management in the school setting; and
- Linkage and collaboration of schools, colleges and universities.

### **Business and industry research**

- Current issues and trends in business such as data-driven management, globalization, product innovation and digitalization;
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- Current issues and trends in the industry-academe linkage such as employability skills and the 21st century skills;
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# The Influence of Financial Slack on Firm Innovativeness: The Moderating Role of Board Size

A.A. Pt. Agung Mirah Purnama Sari

## Abstract

This study aims to investigate the influence of financial slack on firm innovativeness, with board of commissioners and the board of directors as moderating variables. The population of this study consists of 61 companies listed in the Indonesian Stock Exchange, but during the course of the research, some companies were eliminated due to incomplete relevant data from year 2016 to 2021. After the statistical analysis and modelling, this study found that financial slack does not influence firm innovativeness. Similarly, the moderating variables, board of commissioners and the board of directors, also do not moderate the influence of financial slack on firm innovativeness. Hence, the results contradict the hypothesized relationships. This study argues that these findings might be influenced by the economic conditions in Indonesia at that time of the COVID-19 pandemic. As a result, companies shifted their focus and priorities, placing a higher emphasis on the financial health and risk management of the company rather than using excess resources to enhance corporate innovation. While this study is limited to the available sample size, as not all companies allocate their funds for innovation activities, its novelty lies in the inclusion of the board of commissioners and the board of directors as moderating variables in examining the influence of financial slack on firm innovativeness. As such, the research model and findings contribute to the diversity of existing research outcomes on similar topics.

**Keywords:** *Financial slack, firm innovativeness, board of commissioners, board of directors*

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## 1. Introduction

The concept of financial slack involves the surplus resources of a company beyond its current business needs, aimed at boosting sales and fulfilling corporate commitments (Jermias & Yigit, 2023; Mishina et al., 2004; Tran et al., 2018; Mousa & Reed, 2013). Slack plays a crucial role in enhancing corporate innovation by allowing companies to experiment with new strategies, thereby enabling the creation of innovative projects (Nohria & Gulati, 1996). It represents the surplus of available financial resources, including cash and accounts receivable (Bourgeois & Singh, 1983; George, 2005; Greve, 2003; Kim et al., 2008) which provides companies with the freedom to invest their resources in other areas, particularly in research and development (R&D) investments (Kim et al., 2008; Nohria & Gulati, 1996) or new organizational projects (Zona, 2012).

Global business practices indicate that companies tend to retain more financial slack during uncertain demand. According to Picolo et al. (2018), high discretionary financial slack refers to the net working capital while low discretionary financial slack represents the degree of debt. The level of financial resource flexibility represents high discretion as it can be applied to various activities (Kim et al., 2008; Sharfman et al., 1988). Some financial slack practices can occur when a company allows cash and cash equivalents to exceed their actual operational needs which creates high liquidity in the form of financial slack (Liang et al., 2023).

According to Vitale et al. (2023), financial slack resources are useful to boost company innovation. However, several previous studies have shown differing results regarding the influence of financial slack on firm innovativeness. For instance, Parida and Örtqvist (2015) found that high financial slack combined with high levels of network capability and IT capability resulted to highest innovation performance. In addition, Zhang et al. (2021) and Ashwin et al. (2016) discovered that financial slack significantly increases investment in company innovation. While the excess financial resources are more likely to be invested in R&D (Mousa & Chowdhury, 2014) leading to positive effect on firm innovation, it has negative effect on firm performance (Lewis, 2013). This is similar to the findings of Lu and Wong (2019) that higher firm performance leads to lower share of exploratory innovation. Lee (2015) also found a weak relationship between slack and innovation in Korea. The relationship between slack and innovation in Korea depends on varying social and institutional

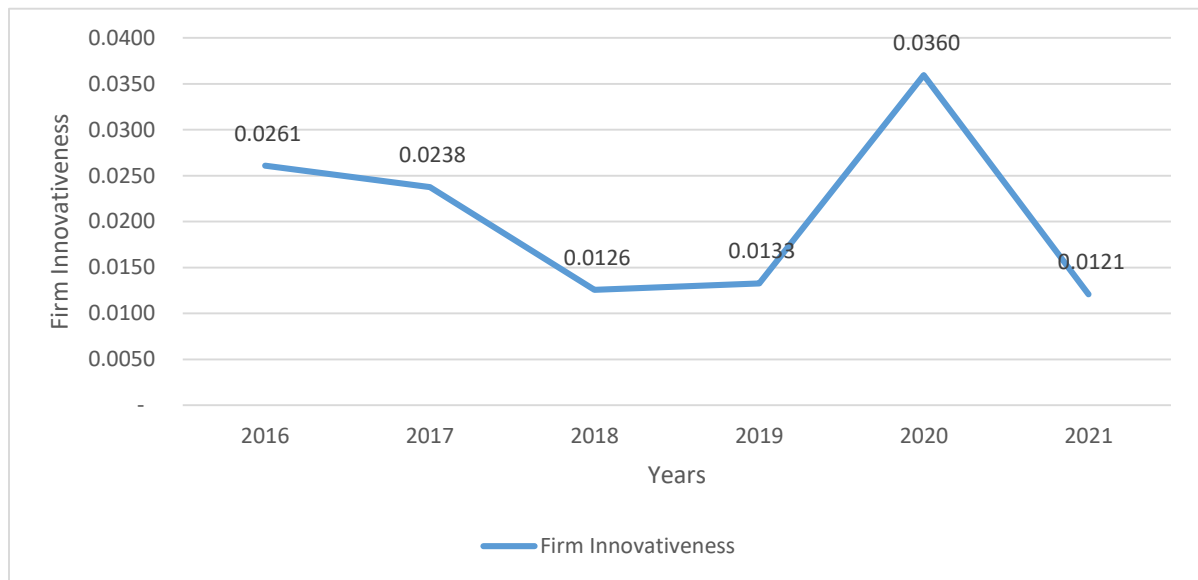
arrangements in which companies operate and the organizational characteristics of the company. Nevertheless, the influence of financial slack on firm innovativeness remains relatively underexplored.

Agency theory is another concept that addresses the relationship between financial slack and firm innovation. Since excess resources owned by the company can create agency problems, financial slack is considered to result in: 1) inefficiency, as managers may not prioritize resources efficiently and may spend a lot of time and money on less profitable projects; or 2) harm performance and hinder risk-taking, wherein the excess financial slack can also hinder innovation and reduce performance. This happens when managers feel secure with a high level of slack and are therefore less motivated to take the necessary risks to develop innovative products and services (Jensen, 1986, 1997; Kim et al., 2008). On the other hand, financial slack provides additional resources that are essential for a company to explore new solutions and opportunities, thereby leading to greater risk-taking and increased investments in R&D (Greve, 2003).

In Indonesia, firm innovativeness shows a rather fluctuating trend. As shown in figure 1, the trend of firm innovativeness among consumer goods manufacturing companies listed in the Indonesia Stock Exchange during the period 2016-2021 experienced fluctuating movements. The fluctuating levels of innovation within these companies could be attributed to various factors, such as external economic influences, changes in market conditions, shifts in management strategies, and fluctuations in research and development investments. It is evident that in 2020, innovation experienced the highest increase. During this year, consumer goods manufacturing companies, especially those in the food and beverage and pharmaceutical subsectors, were required to meet emergency needs such as personal protective equipment and additional medical equipment due to COVID-19. Companies in the consumer goods sector also increased their investments in R&D to find better medical solutions and technologies. In this scenario, the increase in firm innovation can be influenced by financial slack. With financial slack, companies can manage and allocate their available financial resources to enhance their R&D capacity, diversify their products, and explore new concepts and projects in response to the pandemic without worrying excessively about its immediate impact on the company's finances (Kim et al., 2008; Nohria & Gulati, 1996).

**Figure 1**

*Average firm innovativeness for consumer goods manufacturing in Indonesia*



*Source: Processed Research Data (2023)*

This study assessed the effect of financial slack on innovativeness of firms in the Indonesia Stock Exchange. Similar to the previous studies, it aims to prove the statistical relationship of financial slack and firm innovativeness. While there are many studies on the effect of financial slack on firm performance (i.e. Putri et al., 2019; Jermias & Yigit, 2023; Odum et al., 2019; Tran et al., 2018; Yudhanti & Roida, 2022; Feng et al., 2020; Chu et al., 2021; Tabassam & Khan, 2021; Rafailov, 2017; Vanacker et al., 2017; George, 2005; Titus et al., 2022), there are only few studies on its effect on firm innovativeness (i.e. Heubeck & Meckl, 2023; Duan et al., 2020; Lee, 2015; Marlin & Geiger, 2015; Hong & Shin, 2021; Meyer & Leitner, 2018; Hong & Shin, 2016; Lewis, 2013; Beck & Beuren, 2022), much less in the Indonesian setting (i.e. Fuad, 2012). While other studies on firm innovativeness measured with different variables (i.e. Mousa & Chowdhury, 2014; Lu & Wong, 2014; Zhang et al., 2020; Nguyen & Chieu, 2018), only few focused on board composition (Heubeck & Meckl, 2023). Incorporating the concepts of agency theory, this study also examines the moderating effect of board size, utilizing the two-tier system which involves a separation between the board of directors and the board of commissioners, a corporate structure common in Indonesia. This study argues that the presence of the board of directors strengthens the influence of financial slack on firm innovativeness because they can set the company's budget by allocating funds

from financial slack for use in long-term investments, expansion activities, and R&D initiatives. This study also contends that the presence of the board of commissioners enhances the influence of financial slack on firm innovativeness, as the board of commissioners plays a role in overseeing the company's financial practices, thus providing advice and insights to the board of directors for prudent management of financial slack. The utilization of board size as a moderator in this study introduces novelty and contributes to the diversity of existing research outcomes.

## **2. Literature Review and Hypothesis Development**

### ***2.1. Agency Theory***

The agency theory is frequently employed in strategic research to explore how financial slack can impact a company's innovation. The agency theory is utilized to address three issues that can arise in agency relationships: the agency problem arising from conflicting desires or objectives between the principal and agent; the agency problem stemming from the difficulty of the principal in verifying what the agent has actually done; and the risk-sharing problem that arises when the principal and agent have differing attitudes toward risk. Consequently, contracts are created to align the interests of the principal and agent (Eisenhardt, 1989).

The fundamental assumption in agency theory is that managers will act opportunistically by pursuing personal gains before fulfilling the interests of shareholders. Conflicts of interest arising from the possibility that agents do not always act in line with the principal's interests can trigger the emergence of agency costs, which are costs incurred to ensure that managers align with the owner's objectives. Agency costs consist of monitoring costs and bonding costs (Watts & Zimmerman, 1990). This study argues that agency theory as applied involves: conflict of interest, in the context of financial slack, shareholders may want to see efficient use of financial resources to enhance stock value, while managers may have incentives to maintain financial slack as a reserve that provides flexibility and security in managing the company; and monitoring, the board of directors and commissioners as representatives of shareholders can play a role in overseeing management in using financial slack for innovation.

### ***2.2. Financial Slack and Firm Innovativeness***

Investing in corporate innovation carries a high level of risk because companies commit significant resources to experimentation without certainty about the outcomes. The

underutilized resources from financial slack motivate companies to engage in the risk of pursuing innovation through R&D initiatives (Ehie & Olibe, 2010; Guo et al., 2020; Kim et al., 2008). For instance, Shaikh et al. (2018) and Carnes et al. (2019) found a significant positive impact of financial slack on R&D intensity. Similarly, Guo et al. (2020) examined the relationship between financial slack and firm performance, with R&D intensity as a mediating variable and found that R&D investment mediates the influence of financial slack on firm performance. However, the relationship between financial slack and R&D investment weakens at high levels of government subsidies.

This study argues that the presence of board size consisting of the board of directors and the board of commissioners will strengthen the influence of financial slack on firm innovativeness. This is because the board of directors can allocate funds from financial slack to be used in long-term investments, expansion activities, and R&D initiatives. Meanwhile, the board of commissioners plays a role in overseeing the company's financial practices, allowing them to provide advice and insights to the board of directors for prudent management of financial slack.

*H<sub>1</sub>: Financial slack has a positive influence on firm innovativeness.*

*H<sub>2</sub>: The board of commissioners moderates the influence of financial slack on firm innovativeness.*

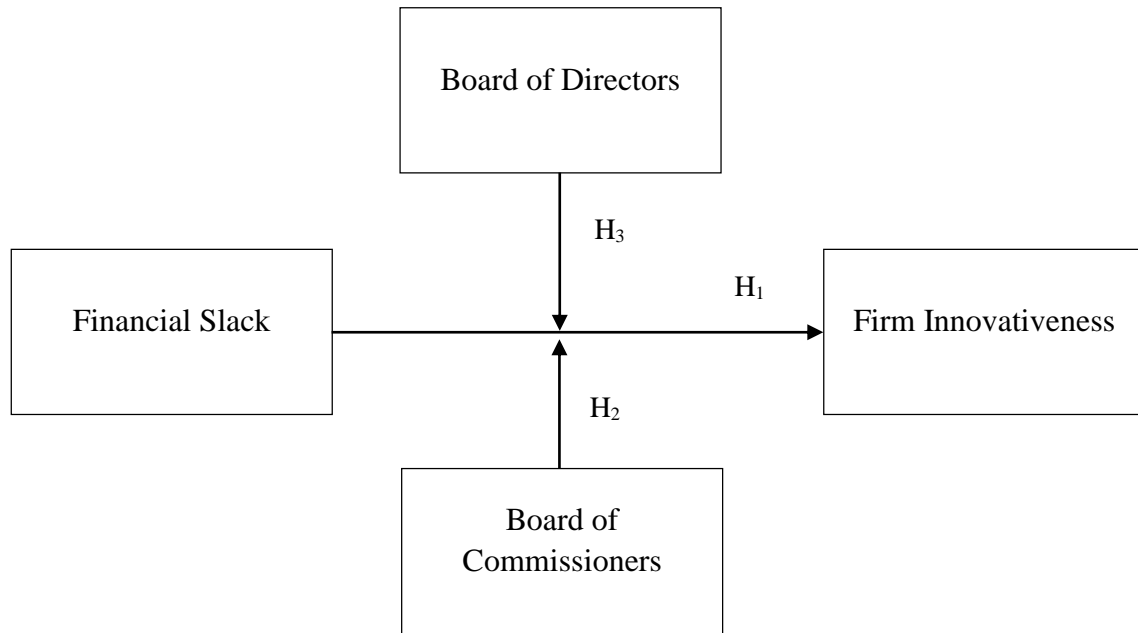
*H<sub>3</sub>: The board of directors moderates the influence of financial slack on firm innovativeness.*

### **3. Research Methodology**

#### ***3.1. Sample and data collection***

The population in this study consists of all manufacturing companies in the consumer goods sector, including subsectors such as food and beverages, tobacco, pharmaceuticals, cosmetics, household goods, household appliances, and others listed in the Indonesia Stock Exchange from 2016 to 2021, totaling 61 companies. The research sample was obtained by eliminating companies with incomplete financial data relevant to the variables under study. As a result, 13 companies with 78 observations were selected as the sample. The conceptual model for this study is depicted in Figure 2.



**Figure 1***Conceptual Model*

### ***3.2. Definitions and measurements***

#### ***3.2.1. Financial Slack***

Financial slack is categorized as unabsorbed slack, consisting of currently uncommitted liquid resources that can easily be redeployed elsewhere (Bourgeois & Singh, 1983). Financial slack is further divided into two categories: available slack and potential slack. Available slack is measured using the current ratio, while potential slack is measured using the leverage ratio (Debt to Equity Ratio). This study only focuses on available slack. The current ratio is a ratio used to measure a company's ability to meet its short-term obligations that will mature soon, utilizing the total current assets available. The formula for the current ratio is shown as follows (Husna & Satria, 2019):

$$\text{Current Ratio} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$$

#### ***3.2.2. Firm Innovativeness***

Firm innovativeness is crucial for achieving higher company performance. Through innovation, companies can introduce new ideas, services, and products that enhance overall company performance. Innovation within a company can be evaluated in terms of its breadth and depth. The breadth of innovation assists companies in introducing novel ideas, such as product innovation, marketing process innovation, overall corporate innovation, and more. On

the other hand, the depth of innovation refers to a company's ability to repeatedly identify new offerings, ensuring readiness for creativity regardless of new offerings (Yousaf et al., 2020). In this study, firm innovativeness is measured using R&D intensity calculated using the following formula (Nam, 2019):

$$\text{R\&D Intensity} = \frac{\text{R\&D Expense}}{\text{Total Assets}}$$

### **3.2.3. Moderation Variable**

There are two types of board structures, namely the single board structure and the dual board structure. The single board structure is used in Anglo-Saxon countries, while the dual board structure is used in continental European countries, including Indonesia. In the single board structure, there is no separation between executive and non-executive directors, whereas in the dual board structure, there is a separation between the board of commissioners and the board of directors (Utama & Utama, 2019).

**Board of Commissioners.** The board of commissioners is responsible for overseeing the board of directors that manages the company. According to the Republic of Indonesia Law No. 40 of 2007 concerning Limited Liability Companies or Perseroan Terbatas, the board of commissioners is a corporate organ tasked with conducting general and/or specific supervision in accordance with the Articles of Association, and providing advice to the board of directors. The board of commissioners is measured by summing up the total number of commissioners and independent commissioners in the company, which can be found in the company's annual report.

**Board of Directors.** According to the Republic of Indonesia Law No. 40 of 2007 concerning Limited Liability Companies or Perseroan Terbatas, the board of directors is defined as the corporate organ fully responsible for the company's interests and purposes, representing the company both within and outside the court, in accordance with the provisions of the Articles of Association (AOA). The board of directors is measured by summing up the total number of directors in the company, which can be found in the company's annual report.

Publicly traded companies in Indonesia are required to have at least two members on their board of commissioners. These companies are also mandated to have independent commissioners, constituting a minimum of 30% of the total board composition. This requirement is stipulated in Article 108 (5) of the Republic of Indonesia Law No. 40 of 2007 concerning Limited Liability Companies and the Regulation of Bapepam-LK IX.J.1 regarding

the Articles of Association of Public Companies, issued by the Indonesian capital market regulator.

## 4. Results and discussion

### 4.1. Descriptive statistics

Table 1 presents the statistical test results of the influence of financial slack on firm innovativeness with the board of directors and the board of commissioners as moderating variables. The data were obtained from company reports and processed from 13 observed companies spanning from 2016 to 2021, resulting to 78 total observations.

**Table 1**

*Descriptive statistics*

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Financial Slack	78	.15	9.22	2.8792	1.78018
Board of Directors	78	2	9	5.51	1.552
Board of Commissioners	78	1	9	4.47	1.857
Firm Innovativeness	78	.000042	.003966	.00171727	.000929194
Valid N (listwise)	78				

*Source: The Research Data Processed (2023)*

The descriptive results of financial slack indicate an average of 2.879, with a standard deviation of 1.780, ranging from a minimum value of 0.15 to a maximum value of 9.22. The description of the board of directors reveals an average of 5.51, accompanied by a standard deviation of 1.552, ranging from a minimum value of 2 to a maximum value of 9. The depiction of the board of commissioners yields an average of 4.47, with a standard deviation of 1.857, ranging from a minimum value of 1 to a maximum value of 9. The description of firm innovativeness shows an average of 0.0017, with a standard deviation of 0.0009, ranging from a minimum value of 0.000042 to a maximum value of 0.003966.

### 4.2. Test Classical Assumptions

Prior to conducting linear regression analysis on the research hypotheses, it is necessary to perform tests for classical assumptions on the data to be processed. The purpose of fulfilling these classical assumptions is to ensure that the independent variables, acting as estimators for

the dependent variable, remain unbiased. Classical assumption tests include tests for normality, heteroscedasticity, multicollinearity, and autocorrelation.

#### 4.2.1. Normality Test

The results of the normality test using the Kolmogorov-Smirnov test are presented in Table 2. Using the Kolmogorov-Smirnov, the test yielded a significance value of 0.087. Since the significance value is greater than 0.05 ( $p > 0.05$ ), it indicates that the residuals follow a normal distribution and the normality assumption is satisfied.

**Table 2**

*Results of Normality Test Using the Kolmogorov-Smirnov Test*

		Unstandardized Residual
N		78
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	.00089342
Most Extreme Differences	Absolute	.094
	Positive	.094
	Negative	-.073
Test Statistic		.094
Asymp. Sig. (2-tailed)		.087 <sup>c</sup>

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Source: The Research Data Processed (2023)

#### 4.2.2. Heteroskedasticity Test

The results of the heteroskedasticity test are presented in Table 3. The Glejser test yielded significance values for each independent variable greater than 0.05 ( $p > 0.05$ ), indicating that no heteroskedasticity issue was found in the model, and thus, the heteroskedasticity assumption is satisfied.

**Table 3**

*Results of Heteroskedasticity Test Using the Glejser Test*

Model	t	Sig.
1 (Constant)	5.427	.000
Financial Slack	-1.498	.138
Board of Directors	-.939	.351
Board of Commissioners	1.095	.277

a. Dependent Variable: Absolute Residual

Source: The Research Data Processed (2023)

#### 4.2.3. Multicollinearity Test

The results of the multicollinearity test are presented in Table 4. Using the VIF, the test yielded VIF values for each independent variable less than 10 ( $VIF < 10$ ), indicating that no multicollinearity issue was found in the model, and thus, the multicollinearity assumption is satisfied.

**Table 4**

*Multicollinearity Test Using the VIF Test*

Model	Collinearity Statistics		
		Tolerance	VIF
1	Financial Slack	.609	1.642
	Board of Directors	.316	3.160
	Board of Commissioners	.438	2.285

*a. Dependent Variable: Firm Innovativeness  
Source: The Research Data Processed (2023)*

#### 4.2.4. Autocorrelation Test

The results of the autocorrelation test are presented in Table 5. Using the Durbin-Watson, the test yielded a DW value of 1.905. For comparison, the value of U is 1.713 and the value of  $4-dU$  is 2.287. These results indicate that the DW value falls within the range of  $dU$  and  $4-dU$  values ( $dU < DW < 4-dU$ ), implying no autocorrelation issue was found, and thus, the autocorrelation assumption is satisfied.

**Table 5**

*Autocorrelation Test Using the Durbin-Watson Test*

Model	Durbin-Watson
1	1.905 <sup>a</sup>

*a. Predictors: (Constant), Board of Commissioners, Financial Slack, Board of Directors*

*b. Dependent Variable: Firm Innovativeness*

*Source: The Research Data Processed (2023)*

#### 4.3. F Test (Goodness of Fit Test)

The results of the F-test are presented in Table 6. The calculated F-value is 1.772, and the significance value is 0.130, while the critical F-value is 2.342. These results indicate that the calculated F-value is less than the critical F-value ( $F_{\text{calculated}} < F_{\text{critical}}$ ), and the significance value is greater than 0.05 ( $\text{sig} > 0.05$ ), thus suggesting that there is no significant influence of financial slack on firm innovativeness with the moderation of the board of directors and the board of commissioners, simultaneously.

**Table 6***Goodness of Fit Test Result*

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	5	.000	1.772	.130 <sup>b</sup>
	Residual	.000	72	.000		
	Total	.000	77			

*a. Dependent Variable: Firm Innovativeness**b. Predictors: (Constant), Financial Slack \* Board of Commissioners, Board of Commissioners, Financial Slack, Financial Slack \* Board of Directors, Board of Directors**Source: The Research Data Processed (2023)*

#### 4.4. Moderation Regression

The results of the moderation test on the influence of financial slack on firm innovativeness with the board of directors and commissioners as moderating variables are presented in Table 7.

**Table 7***Moderation Regression Result*

		Coefficients <sup>a</sup>				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.001	.000		2.611	.011
	Financial Slack	-7.290E-5	.000	-.140	-.898	.372
	Board of Directors	.000	.000	.288	1.452	.151
	Board of Commissioners	1.081E-5	.000	.022	.128	.898
	Financial Slack * Board of Directors	-7.112E-5	.000	-.262	-1.659	.101
	Financial Slack * Board of Commissioners	5.394E-5	.000	.144	1.004	.319

*a. Dependent Variable: Firm Innovativeness**Source: The Research Data Processed (2023)*

The results of the moderation regression equation between financial slack and firm innovativeness moderated by the board of directors and commissioners are presented as follows:

$$\text{R\&D Intensity} = 0.001 - 7.290 \times 10^{-5} \text{ Financial Slack} + 0.000 \text{ Board of Directors} + 1.081 \times 10^{-5} \text{ Board of Commissioners} - 7.112 \times 10^{-5} \text{ Financial Slack} * \text{ Board of Directors} + 5.394 \times 10^{-5} \text{ Financial Slack} * \text{ Board of Commissioners} + \varepsilon$$

The equation indicates that:

- a) The influence of financial slack on firm innovativeness is obtained with a regression coefficient of  $-7.290 \times 10^{-5}$ , a t-statistic value of 0.898, and a significance value of 0.372. These results show a negative influence but not statistically significant. This means that the higher the value of financial slack, the change in firm innovativeness will not be significantly affected. For every 1-unit increase in financial slack, there is a change of  $-7.290 \times 10^{-5}$  units in firm innovativeness. Thus,  $H_1$  is rejected.
- b) The influence of financial slack on firm innovativeness moderated by the board of commissioners results in a regression coefficient of  $5.394 \times 10^{-5}$ , a t-statistic value of 1.004, and a significance value of 0.319. These findings indicate a positive influence but not statistically significant. This suggests that higher values of financial slack moderated by the board of commissioners will not significantly impact changes in firm innovativeness. For every 1-unit increase in financial slack moderated by the board of commissioners, there is a change of  $5.394 \times 10^{-5}$  units in firm innovativeness. Thus,  $H_2$  is rejected.
- c) The influence of financial slack on firm innovativeness moderated by the board of directors' results in a regression coefficient of  $-7.112 \times 10^{-5}$ , a t-statistic value of 1.659, and a significance value of 0.101. These findings indicate a negative influence but not statistically significant. This implies that higher values of financial slack moderated by the board of directors will not significantly impact changes in firm innovativeness. For every 1-unit increase in financial slack moderated by the board of directors, there is a change of  $-7.112 \times 10^{-5}$  units in firm innovativeness. Thus,  $H_3$  is rejected.

## ***4.5. Discussion***

### ***4.5.1. Financial Slack and Firm Innovativeness***

The first finding indicates that financial slack, measured by the current ratio, does not have a significant effect on firm innovativeness, measured by R&D intensity. This result contradicts the hypotheses formulated. Financial slack refers to the financial resources that exceed a company's operational needs. In the context of firm innovation, there are arguments and evidence supporting the view that having financial slack can positively impact a company's innovation. However, there are several reasons why financial slack might not always have a positive effect on firm innovation, such as comfort, delayed actions, and shifting priorities.

When a company has a large financial slack, management tends to feel more comfortable and less urgency to take innovative actions. They might feel that they have enough time and resources to address innovative challenges in the future. This can lead to a delay in taking the necessary innovative steps. Moreover, considering that this study was conducted during the COVID-19 pandemic in Indonesia (Thaha, 2020), this study argues that the phenomenon of the COVID-19 pandemic might have influenced managerial actions in executing financial slack. Managers prioritized using their excess resources to survive amid the pandemic rather than engaging in innovation activities. Managers and other stakeholders shifted their focus and did not prioritize company innovation during that time.

#### ***4.5.2. Financial Slack, Board of Commissioners, and Firm Innovativeness***

The second finding indicates that the board of commissioners does not moderate the effect of financial slack on firm innovativeness. This result rejects hypothesis 2. The board of commissioners plays a crucial role in overseeing and directing a company's activities, including decisions related to innovation and resource allocation. However, the board of commissioners might not always be effective in mediating the influence of financial slack on company innovation. This study argues that this might occur due to a shift in the focus of the board of commissioners, especially in 2019 when Indonesia was facing the unprecedented COVID-19 pandemic (Thaha, 2020). They might have been more inclined to monitor financial aspects rather than delve into the details of innovative initiatives and resource allocation decisions for innovation. The COVID-19 pandemic faced by Indonesia could have led to a shift in the strategic focus of the board of commissioners. They might have become trapped in day-to-day operational monitoring, neglecting their role in guiding long-term innovation strategies to ensure the company's survival amid global economic uncertainty.

#### ***4.5.3. Financial Slack, Board of Directors, and Firm Innovativeness***

The third finding indicates that the board of directors does not moderate the effect of financial slack on firm innovativeness. This rejects hypothesis 3. The board of directors holds a strategic role in overseeing and guiding the company, including decision-making regarding innovation and resource management. However, this study argues that there are several factors that could explain why the board of directors might not always be effective in mediating the influence of financial slack on company innovation. One of these factors is the recurring theme of the COVID-19 pandemic faced by Indonesia, spanning from 2019 to 2021, which were years marked by economic turbulence globally, including in Indonesia (Thaha, 2020). Due to this



situation, managers might have shifted their focus and priorities towards financial aspects, growth, and potential risks that the company might encounter. As a result, their attention on company innovation could have diminished.

## **5. Conclusion, contributions, limitations, and future research**

### ***5.1. Conclusion***

This study yielded results indicating that financial slack does not have a significant effect on firm innovativeness, hence rejecting H1. The additional findings also reveal that the boards of directors and commissioners are not capable of moderating the influence of financial slack on firm innovativeness, leading to the rejection of H2 and H3, as well. These outcomes that deviate from the hypotheses could likely be influenced by the global economic conditions that impacted Indonesia during the Covid-19 pandemic. The concept that financial slack does not significantly affect firm innovativeness aligns with the agency theory employed in this research.

### ***5.2. Contribution***

This study examines the influence of financial slack on firm innovativeness with the boards of commissioners and directors as moderating variables. The research model introduced here is relatively novel and is expected to address gaps in previous research findings. This research is expected to contribute to: managers and corporate executives to gain a deeper understanding of financial slack as they are responsible for managing the company's financial resources. This understanding assists them in allocating resources to support innovation, expansion, product development, and other business needs; board of commissioners and directors, as they play a crucial role in overseeing and making strategic decisions for the company. Understanding financial slack helps them be more effective in achieving the company's goals, including innovation; financial analysts and finance professionals, to assist them in making investment recommendations and credit decisions; public policymakers, to help them design policies that support economic stability and growth; and future researchers by adding insights to the body of knowledge and serving as a reference for subsequent researchers conducting similar research in the future.

### ***5.3. Limitations***

This study is constrained by the available sample size, as not all companies allocate their resources for innovation activities. Moreover, during the time of the study, Indonesia was grappling with the COVID-19 pandemic, causing companies to prioritize their financial

sustainability and risk management (Hermanto et al., 2021; Thaha, 2020). This shift in focus allowed companies to temporarily overlook matters related to enhancing innovation within the organization.

#### ***5.4. Future Research***

In future research, it is recommended to incorporate additional variables that might influence firm innovativeness. Using different measurements could also enhance the depth of the findings on the topic of firm innovativeness. Furthermore, linking the research model with other relevant theories could provide a more comprehensive understanding of the subject. These steps would contribute to a more holistic and nuanced exploration of the relationship between financial slack, firm innovativeness, and the moderating roles of board of directors and board of commissioners.

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# Association Between Emotional Intelligence and Turnover Intention: Its Effects on Job Performance in the Banking Sector

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## Abstract

Studies in the banking sector in Pakistan showed that emotional intelligence (EI) and retention of employees had been found to be essential components in the job performance. Hence, this study tries to assess the relationship between emotional intelligence and job performance and turnover intention in the Pakistani banking industry. By examining how emotional intelligence might help with employee retention and performance, it aims to address the problem of high turnover rates. A total of 190 questionnaires were distributed to employees in various banks in Peshawar and Lahore, of which 169 questionnaires were collected back with a return rate of 89. Using AMOS version 26, the model was tested using a two-stage SEM methodology; first, the measurement model was used to assess the validity and reliability of the instrument, and then the structural model was estimated. The findings revealed that there was a positive and significant connection between EI and job performance, the relationship of turnover intention was found to be negative and significantly linked to EI. The results further show a positive but insignificant relationship between turnover intention and job performance. The results imply the prioritization of EI development among bank employees. This can be achieved through training and development programs that focus on improving emotional awareness, emotional regulation, empathy, and social skills.

**Keywords:** *emotional intelligence, turnover intention, job performance, employees, banks, Pakistan.*

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## 1. Introduction

Pakistan's banking industry makes a major economic contribution to the nation. In fact, it plays a critical role in mobilizing savings, facilitating investments, and providing financial services to individuals and businesses. It has also been crucial in promoting the expansion of the agricultural industry and supporting small enterprises (Mughal, 2015). In addition, this industry has played a significant role in producing jobs over the years. However, employee turnover remains a pressing concern within Pakistani enterprises (Reina et al., 2018). The high costs associated with recruiting and training new staff, along with the potential impact on organizational performance, make it an issue worth addressing (Dharmawan et al., 2015). Statistics indicate that a substantial 35 percent of banks grapple with high employee turnover, triggering concerns about service quality, customer attention, and feedback mechanisms. These facets are intrinsically tied to the emotional stability, talent, and motivation levels of workforce (Hassan, 2019).

According to Allen et al. (2010), staff replacement may cost more than one year's compensation just to fill a position. For an employee to have a good career and for a business to survive at all levels, especially in the service industry, job turnover intention is a crucial management concept in the twenty-first century (Hassan & Jagirani, 2019; Lee & Chon, 2000). With the growing interest in worker turnover intention, several studies have been undertaken to determine the predictors of worker turnover intention, and several characteristics such as Emotional Intelligence (EI) (Da Camara, 2015; Giao, 2020; Sharma & Tiwari, 2023), and job burnout (Lu & Gursoy, 2013; Scanlan & Still, 2019; Salama et al., 2022; Jiang et al., 2022) had been uncovered. EI in leaders can aid firms in reducing employee turnover and retaining valuable staff (Mohammad et al., 2014) and it is one of the primary elements that affect an employee's inclination to leave (Avey et al., 2009).

In the banking industry, a unique characteristic is the interaction between service providers (employees) and service recipients (customers). This dynamic signifies that employees are integral to the service experience, serving as the face of the service. Consequently, the role of employees as service ambassadors who deliver high-quality services to customers is paramount. An emerging challenge for banks is the need to comprehend and manage the emotions and job-related sentiments of their employees. In terms of emotional



control, Judeh (2013) asserts that EI is a key aspect in perceiving and assessing human behavior at work. Most effective service firms are sensitive to their employees' feelings and are always concerned about any difficulties that may endanger them. However, EI is a broad concept that refers to an employee's ability to collaborate with others to achieve a common goal. It can improve employees' appropriate emotions in meeting customers' expectations, resulting to a positive image of the company (Hassan & Jagirani, 2019).

According to Mumtaz and Hasan (2018), banks in Pakistan and the Asian region experience a high employee turnover rate. Employee job turnover refers to transferring jobs because of an organization-wide issue that forces employees to quit their jobs (Price, 1977; Casselman, 2023; Sull et al., 2022). While employee job turnover is caused by a number of variables, including a lack of job engagement, a rigid organizational culture, and inadequate pay, all of which have a significant impact on the final result. Several variables contribute to significant employee turnover, including aggressive boss behavior, poor working conditions, and a lack of possibilities for growth and development (Saeed et al., 2014). Employee job churn not only costs the company a lot of money, but it also degrades human capital, time, dexterity, and experience.

Previous studies on employee's turnover intention have focused on other sectors like education (i.e. Iqbal et al., 2014; Hussain et al., 2020; Khan & Qadir, 2026; Akhtar et al., 2022; Shah & Khan, 2015; Khan et al., 2020), marketing (i.e. Noor & Maad, 2009; Khan & Du, 2014; Mehmood et al., 2016)), and services sector and (Bajwa et al., 2014; Juma & Arshad, 2019). While there are studies on turnover and turnover intention in the banking sector of Pakistan (i.e. Pahi et al., 2016; Hassan & Jagirani, 2019; Khan, 2014; Shahid et al., 2023), there are only few studies on association between EI and turnover intention in the banking industry of Pakistan (i.e. Iqbal et al., 2022). Hence, this study adds to the local context because it will shed light on the situation and pave the way for future studies on staff turnover in banks.

Throughout the organizational development era, employee turnover remained a significant problem for researchers and practitioners (Mumtaz & Hasan, 2018). Most of the research (Nazim, 2008; Kanwal & Majid, 2013) viewed job dissatisfaction as a primary reason why people left their jobs, giving room to look into additional factor like EI. This study argues that EI plays a significant role in shaping job performance and turnover intentions. Hence, this

study aims to find out how employees' EI affects their performance at work and how this relationship impacts their intention to leave or stay in their current position. As there are only few studies on the same nature in Pakistan, this underscores originality and significance in the banking industry.

## **2. Literature review**

### ***2.1. Emotional Intelligence***

EI was initially used in 1990 by Salovey and Mayer, who defined it as "*the ability to monitor one's own and other people's moods and emotions, to discern between them, and to use this information to direct one's thinking and actions.*" Since then, many researchers have expanded on this definition and developed their conceptualizations of EI (Mayer et al., 2016). It is an essential concept in the field of psychology and organizational behavior and is relevant to a variety of outcomes, including job satisfaction (Ouyang & Huang, 2021), leadership effectiveness (Jordan et al., 2020), and turnover intentions (Lee & Ok, 2020). Contemporary researchers continue to explore the nature and measurement of EI. For instance, Lopes et al. (2020) found that higher levels of emotional intelligence were associated with better social interaction while Mayer et al. (2016) built on the idea that EI is made up of four abilities: perceiving, using, comprehending, and controlling emotions. There has been much discussion about Mayer et al.'s (2016) model of emotional intelligence (EI). There is a debate about what really constitutes emotional intelligence, with several theories and frameworks vying for the top spot. While the four-abilities model proposed by Mayer et al. (2016) offers a structured foundation, there is discussion as to whether a more condensed framework might more effectively capture the essence of emotional intelligence. Moreover, the reliability and validity of existing measurement tools continue to be debated, prompting calls for more refined assessment instruments. The influence of cultural and contextual variations on emotional intelligence is another contentious issue, with researchers exploring the necessity of adapting or expanding the model to account for diverse sociocultural settings. There is also ongoing discussion about the predictive accuracy of emotional intelligence, specifically its usefulness in predicting outcomes in the real world like work performance and overall wellbeing. The amount to which emotional intelligence overlaps with personality traits, social skills, and cognitive abilities is a topic of discussion among researchers who study the relationship between emotional intelligence and related categories.

## ***2.2. Job Performance***

Job performance is a broad construct that refers to how well an individual performs the tasks and responsibilities associated with their job. It is a key outcome of interest in the field of organizational behavior and is often used as a criterion for evaluating the effectiveness of individual employees and teams (Huang & Gong, 2021). Performance is a person's outcome or overall level of success in completing a task over time, as assessed against a variety of factors including work standards, targets, or set criteria that have been mutually agreed upon (Saeed et al., 2014). Workplace factors include physically demanding tasks, employee satisfaction, stress levels, and long hours all affect how well employees execute their jobs (Jacobs et al., 2013). Overall, job performance is a complex construct that is affected by several factors and is essential for the success of individuals and organizations in the workplace.

## ***2.3. Turnover Intention***

Turnover intention is a term used to describe an employee's intention to leave their current job or organization. It is an important outcome variable in organizational behavior research, as high levels of turnover intention can have negative consequences for organizations, including increased costs associated with the recruitment and training of new employees, as well as decreased productivity and morale (Jiang et al., 2021). One of the most powerful predictors of turnover is turnover intention (Abbasi & Hollman, 2000; Long & Thean, 2011). The purposeful and conscious thought process of whether to stay or resign a place of employment is stated as turnover intention (Long & Thean, 2011; Wells & Welty Peachey, 2011). There are two types of turnover: voluntary and involuntary turnover (Dess & Shaw, 2001). The former argues that people leave their jobs voluntarily when they are dissatisfied with them and are willing to look for another one in a different location. The latter states that there is involuntary turnover when managers fire staff (Khan et al., 2014; Saeed et al., 2014; Chan & Ao, 2019).

## ***2.4. EI and Job Performance***

According to Shamsuddin and Abdul Rahman (2014), there is a strong correlation between EI and job performance, implying that employees with higher levels of EI tend to perform well on the job as against those with lower levels of EI. A meta-analysis by Extremera and Fernández-Berrocal (2020) found that EI was positively related to job performance, with

an overall effect size of 0.24. The study also discovered that positions with higher emotional demands had a stronger link between EI and job performance. Agarwal and Singh (2020) investigated the connection between EI and workforce performance in the UAE and highlight that not all aspects of emotional intelligence (EI) equally contribute to worker success. Certain facets of EI, such as emotional perception, emotional regulation and empathy appear to exert varying levels of influence. These differences may stem from factors like job relevance, organizational culture, individual variations, and the effectiveness of training programs. On the other hand, Carrillo et al. (2020) discovered that EI has a favorable link with job satisfaction and job performance. This shows that workers with higher EI scores are more engaged in their work and produce higher-quality outputs. When compared to employees who perform their jobs satisfactorily but with a typical EI score, employees with a high EI score perform better (Bozionelos & Singh, 2017). In addition, Tariq et al. (2021) investigated the connection between EI and job performance among Pakistani software engineers and found that EI was positively linked to job performance with link mediated by emotional labor strategies. The information on EI and job performance supported the existence of a link between the two (Asiamah, 2017; Bandi & Chauhan, 2019; Shehu & Isa, 2019; Sule & Edogbanya, 2021; Zhang et al., 2020). Hence, this study argues that:

*H1: EI and job performance have significant positive relationship*

### ***2.5. Job Performance and Turnover Intention***

Employee turnover intention is influenced by work performance. Work performance and turnover intention are inversely associated (Zimmerman & Darnold, 2009). This means that employees with higher turnover intentions tend to have lower levels of job performance compared to those with lower turnover intentions. Several studies have found evidence of this relationship such as Griffeth et al. (2000) highlighting that job performance was negatively linked to turnover intentions among US employees. Similarly, a study by Hassan and Ahmed (2011) found that job performance was negatively related to turnover intentions of Pakistani bank employees. However, the role of emotional intelligence and how it might affect the relationship between job performance and turnover intentions was not explored in the previous study. As such, Hassan and Ahmed (2011) emphasized the need for the impact of emotional intelligence on the relationship between job performance and turnover intentions. Meanwhile,

Huang et al. (2018) investigated the connection between turnover intentions and job performance among Taiwanese employees and found that turnover intentions were adversely associated with job performance. With the results of the previous studies, this study hypothesizes that:

*H2: Turnover intentions and work performance are inversely correlated.*

## **2.6. EI and Turnover Intentions**

Emotional intelligence has a negative correlation with turnover intention. This means that people with higher levels of EI are less likely to intend to leave their job as compared to those with lower levels of EI. For instance, Lee and Ok (2020) found that EI among Korean employees was adversely related to turnover intention. Similarly, Javed et al. (2019) disclosed the connection between EI and turnover intention among Pakistani employees as negative; employees with higher levels of EI had lower turnover intentions. Employee EI not only lessens workplace tension and stress but also discourages others from considering quitting (Raza et al., 2018).

Almost every firm is dealing with the issue on employee turnover. It becomes a major organizational concern as it hampers the operations if staff plans to leave. Employees who are about to leave are less likely to commit to giving their all for the company (Yun et al., 2015). Workers with higher EI scores tend to have lower turnover intention, which can have important implications for organizations in terms of reducing turnover rates and improving job satisfaction. (Anand & UdayaSuriyan, 2010; Carmelli, 2003; Kooker et al., 2007; Akhtar et al., 2018; Riaz et al., 2018). Hence, this study argues that:

*H3. EI has a significant negative correlation with turnover intention.*

## **3. Methodology**

### **3.1. Strategy and Instrumentation**

This study used a quantitative research strategy that emphasizes measurement in data collection and analysis. Primary data was collected using a survey design method.

Wong and Law (2002) designed an eleven-item questionnaire to assess the nature of emotional intelligence graded on a five-point Likert scale, with five being 'strongly agree' and one 'strongly disagree'. Meanwhile, the four-item job performance questionnaire was self-developed and was graded on a five-point Likert scale, with five being 'strongly agree' and one 'strongly disagree'. The four-item Michigan (1975) assessment was used to assess the nature of turnover intentions using a 5-point Likert scale.

### ***3.2. Participants***

Participants of the study were employees working in different banks in Peshawar and Lahore in Pakistan. A total of 190 questionnaires were given out to the staff members of the various banks. After reading and comprehending the statement, respondents circle the right number on each scale to indicate how they feel, think, or act in their companies. Each participant was given ample time to complete the questionnaire. With 169 questionnaires returned, the study had 89% response rate. The 169 employees from various banks in Pakistan aged 21 to 50 years were included as the study samples. With the anonymity of the data collection process, respondents were guaranteed the confidentiality of their answers.

### ***3.3. Measurements and Structural Equation Models***

The measurement and structural equation models were performed by using AMOS version 26. The gathered data were further explored using Structural Equation Modelling (SEM). The model was tested using a two-stage SEM methodology. First, before estimating the structural model, the measurement model was utilized to evaluate the instrument's accuracy and dependability (Schumacker & Lomax, 2010). The study determined whether an item's loading was larger than or equal to 0.5; its internal consistency by checking that its composite reliability scores were above 0.7; and its convergent validity by verifying that its average extracted variance was greater than or equal to 0.5 (Hair et al., 2010).

### ***3.4. Normality Table***

The skewness-kurtosis method was employed to determine whether all the variables were normal by using SPSS 28 (Hair et al., 2010). They were all determined to be within their respective ranges. All skewness values are below their "3" cut-off and all the values of kurtosis fall under the "8" cutoff (Schumacker & Lomax, 2010; Byrne, 2016) as shown in Table 1.

**Table 1***Assessment of Normality*

<b>Items</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>
1TI	2.2781	1.0909	0.541	-0.591
2TI	2.2485	1.11687	0.507	-1.004
3TI	2.4142	1.07184	0.196	-1.204
4TI	2.9763	1.69366	0.149	-1.705
1JP	3.4497	1.20471	-0.449	-0.789
2JP	3.5089	1.17066	-0.517	-0.672
3JP	3.4438	1.15911	-0.488	-0.656
4JP	3.6331	1.08905	-0.655	-0.282
1EI	3.4793	1.17051	-0.197	-1.176
2EI	3.8284	0.95126	-0.363	-0.806
3EI	3.6864	1.10835	-0.441	-0.853
4EI	3.284	1.19614	0.005	-1.309
5EI	3.6331	1.13193	-0.634	-0.511
6EI	3.7337	1.07741	-0.52	-0.765
7EI	3.6746	1.18297	-0.61	-0.7
8EI	3.7219	1.0909	-0.819	-0.045
9EI	3.9053	1.03649	-0.717	-0.606
10EI	3.645	1.28336	-0.524	-1.132
11EI	3.8994	0.90399	-0.484	-0.516

**3.5. Measurement Model**

To investigate the measurement model fit and then assess the measurement model's validity, a CFA was performed using the AMOS program 26. The analysis demonstrates that this model satisfactorily satisfies the matching requirements. The indication loadings were used to evaluate the indicator reliability. Although 0.70 and higher indicator loadings are advised (Hair et al., 2010), indicators with loadings of less than 0.4 were removed from their respective constructs under this criterion. Figure 1 shows the final model with the indicators used in the structural analysis and their corresponding loadings.

**3.5.1. Model Fitness**

The following fit indices have been tested to evaluate the model's fitness: RMSEA, RMR, AGFI, GFI, NFI, CFI, and CMIN/DF (Hair et al., 2010). Further reassessments were made to guarantee that the model and the data were well-matched because some of these indices failed to meet their threshold values (Byrne, 2016). Standardized regression weights (factor loadings), modification indices, and a standardized covariance matrix were examined as part of a refinement process' fundamental guidelines to improve the model's fitness (Hair et

al., 2010). Based on the standardized regression weights, some indicators from the initial measurement model were removed to improve the model's fitness. There were a total of 8 items from the EI scale, 3 items from turnover intention, and 3 items from the job performance scale after lower loading items were eliminated.

Table 2 displays the modification indices for the initial and final measurement models. The model's fit indices were all within the necessary range, except the chi-square, which was significant ( $\chi^2 = 133.940$ ,  $df=71$ ,  $p=.000$ ).

**Table 2**

*Results of Measurement Model*

Fit Index	Recommended Value	Initial Measurement Model	Modified Measurement Model
CMIN / DF	Less than 5	4.358	1.915
The goodness of Fit Index (GFI)	> 0.90	.717	.900
Adjusted Goodness of Fit Index (AGFI)	> 0.80	.639	.854
Tucker and Lewis Index (TLI)	> 0.90	.720	.943
Comparative Fit Index (CFI)	> 0.90	.756	.955
Normed Fit Index (NFI)	> 0.90	.707	.911
Root Mean Square Residuals	< 0.08	.07	.0538
RMSEA	< 0.08	.141	.074

### 3.5.2. Construct Reliability and Validity

According to Hair et al. (2010), reliability, convergent validity, and discriminant validity are assessed using Cronbach's alpha, composite reliability (CR), and average variance retrieved (AVE). According to table 3, Cronbach's alpha constructs have values greater than the threshold of 0.70 (Byrne, 2016) and their CR values are all within 0.70 (Hair et al., 2010). The AVE must be > 0.50 to be valid for convergent reasoning (Schumacker & Lomax, 2010; Hair et al., 2010).

Table 3 displays the constructs' reliability and convergent validity of EI, turnover intention, and job performance.

Table 4 ensures that the model reaches the required level of discriminant validity, and the  $r$  between the two constructs can be calculated to reach an equivalent degree of discriminant validity,  $r$



$\leq 0.90$  (Hair et al., 2010). The values are greater than their correlation with other constructs; the square roots of EI = 0.758, TI = 0.791, and JP = 0.798. Overall, the discriminant validity between the constructs can be accepted for this model.

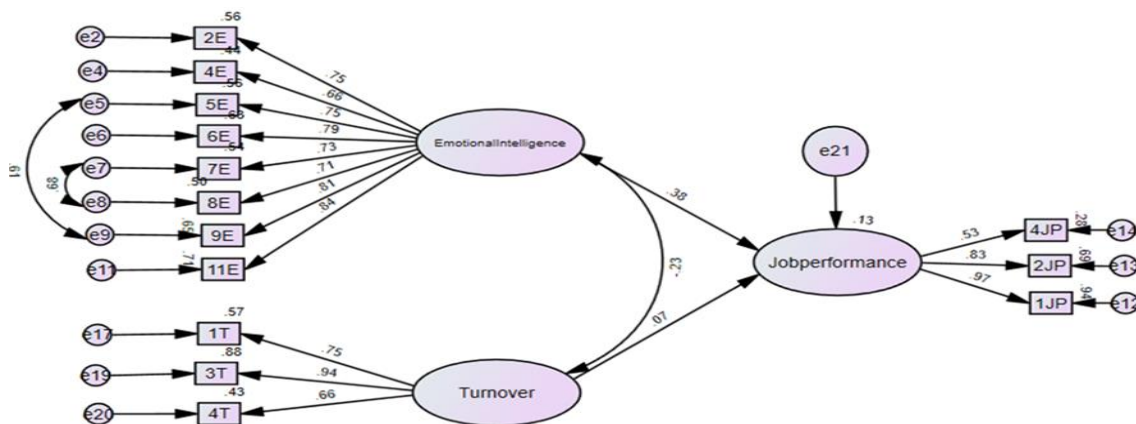
**Table 3***Constructs Reliability and Convergent Validity*

Constructs	AVE	CR	CA
Emotional Intelligence	0.574	0.915	0.926
Turnover Intention	0.626	0.831	0.802
Job Performance	0.636	0.833	0.641

**Table 4***Discriminant Validity*

	Emotional Intelligence	Job Performance	Turnover Intention
EI	0.758		
JP	0.359	0.798	
TI	-0.227	-0.012	0.791

### 3.6. Structural Model

**Figure 1***Structural Model*

Source: Computed through AMOS version 28 and results are reported

Structural model outcomes were found to be quite like the modified measurement model indicating the good fit model; based on the same criteria used to evaluate the goodness-of-fit for the proposed model. Even though the chi-square was significant ( $\chi^2 = 137.886$ ,  $df =$

72,  $P = 0.000$ ), the other fit indices were noticed within their threshold values as follows:  $2/df = 1.915$ ,  $GFI = 0.900$ ,  $AGFI = 0.854$ ,  $CFI = 0.955$ ,  $NFI = 0.911$ ,  $RMR = 0.05$  and  $RMSEA = 0.074$ .

#### 4. Results

The study evaluated how EI and turnover intention affected work performance (table 5 & figure 2). The results showed that work performance and EI are strongly correlated ( $b = 0.375$ ,  $t = 4.404$ ,  $p < 0.05$ ). Given that the t-value is higher than 1.96 and the p-values are lower than 0.05, hypothesis H1 is accepted. However, the connection between turnover intention and job performance is not significant ( $b = 0.073$ ,  $t = 0.900$ ,  $p = 0.36$ ), given that the p-value is more than 0.05 and the t-value is less than 1.96; H2 was therefore supported. The relationship of EI on turnover intention was adverse and significant ( $b = -0.132$ ,  $t = -2.502$ ,  $p < 0.05$ ), therefore H3 is accepted. The squared multiple correlations ( $R^2$ ) values and the impact for endogenous latent variables can be calculated as 0.26 (high), 0.13 (mild), and 0.02 (low/ poor). The  $R^2$  value for job performance was 0.135, indicating that turnover intention and emotional intelligence together account for 13.5% of the variance in job performance. The model of this investigation demonstrated the model-data fit and has an effect ranging from medium to high because the  $R^2$  values for job performance were greater than 0.13 but less than 0.26.

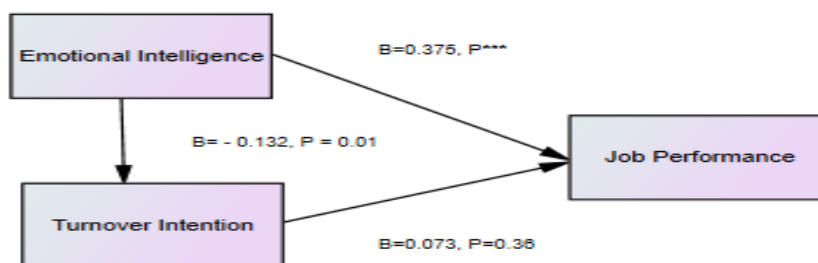
**Table 5**

*Hypothesis Testing*

Hypothesis Relationship	Standardized Estimates	t-value	p-value	Decisions
Job Performance <--- EI	0.375	4.404	***	Accepted
Job Performance <--- TI	0.073	0.900	0.36	Not Accepted
EI <--> TI	-0.132	-2.502	0.01	Accepted

**Figure 2**

*Structural Model*



Source: Computed through AMOS version 26 and results are reported

## 5. Discussion

The findings showed a positive and significant relationship between EI, and work performance, which supported the alternative hypothesis. It was found that employees with higher EI are more capable of handling events at work and, as a result, experience more job satisfaction than others who are unable to do so (Ceballos et al., 2017). Furthermore, it was noted that EI is a critical factor in the success of individuals and organizations across various industries, including the banking sector. In the banking sector, employees with high levels of EI can effectively manage their emotions and those of their clients, resulting to better client satisfaction, increased customer loyalty, and ultimately, improved business performance (Suliman & Al-Shaikh, 2020). Employees with high levels of EI were better in recognizing client's needs, which results to higher levels of client satisfaction and loyalty. Additionally, employees with high levels of EI were found to be better at resolving conflicts and managing difficult clients, which improved the overall quality of client interactions. The main factor predicting turnover intention, which results in a real turnover, is emotion. Employees that are emotionally intelligent understand negative emotions better, are highly adept at avoiding them and are aware of the adjustments that must be made to reduce feelings of irritation (Carmeli, 2003). This conclusion is constant with the study findings of Navarro-Carrillo et al. (2020) on the link between EI and job performance; employees with a higher EI are more pleased with their professions and perform better. Employees with high EI outperform those who have a normal EI score (Bozionelos & Singh, 2017). Hence, EI and job performance have a positive relationship (Dhani, 2016). Employees must be able to recognize and control their own and other people's emotions to enable employee interaction, which is critical for greater job performance (Cohen & Abedallah, 2015).

The results indicate a positive but insignificant correlation between turnover intention and job performance, rejecting the second hypothesis that turnover intention at work is detrimental to performance. While there is considerable research suggesting that high turnover intentions are negatively associated with job performance, there is also evidence of an insignificant relationship between these variables in some studies. Shahid et al. (2019) revealed that whereas organizational factors and job satisfaction were adversely correlated with turnover intentions, job performance was not significantly associated with turnover intentions. Note that correlation between turnover intentions and job performance may be influenced by a range of

individual and organizational factors. In the context of the current study focusing on bank employees, it is crucial to consider the distinctive characteristics of this group. Bank employees work in a fast-paced, cutthroat industry where prospects for professional growth are frequently correlated with job performance. The study found some interesting findings on the connection between job performance and turnover intentions. First, the results supported the idea that workers who do well on the job may be more open to outside offers of better-paying or more desirable jobs, which would increase their desire to quit their current employer. This underscores the attractiveness of these employees to the job market. Furthermore, the research shed light on the multifaceted influence of organizational factors within the banking industry. Elements such as job design, compensation structures, and leadership practices were found to have dual effects, impacting both job performance and turnover intentions. These intricate relationships emphasize the significance of a holistic approach to understanding employee dynamics within the banking sector. In essence, the study not only provides valuable insights into the unique dynamics of bank employees but also highlights the need for tailored strategies to address turnover intentions in this context.

The association between EI and turnover intentions among employees have a significant inverse relationship. A study by Hassan et al. (2020) found that employees with higher levels of EI reported lower levels of turnover intentions, while employees with lower levels of EI reported higher levels of turnover intentions. Similarly, Rashid et al. (2019) found that employees with higher levels of EI were associated with lower levels of turnover intentions in the banking sector in Bangladesh.

## **6. Conclusion**

EI is a crucial factor in the banking sector's performance and retention of employees. According to the literature, employees with higher EI scores are more likely to perform better on the job, have fewer plans to quit, and have higher degrees of loyalty to the company as well as job satisfaction. It is common for crucial individuals who act as the backbone of a business to also consider leaving the company. This can be riskier for the organization's advancement because individuals who consider leaving will begin to find more alluring opportunities elsewhere.

There is a connection between EI and turnover intentions (Carmeli, 2003; Firth et al., 2004; Trivellas et al., 2011). The negative relationship between EI and turnover intentions suggests that organizations should prioritize the development of EI among their employees through training and development programs that focus on improving emotional awareness, emotional regulation, empathy, and social skills. Additionally, organizations should focus on creating a positive work environment that fosters positive interpersonal relationships among employees and between employees and supervisors.

The relationship between job performance and turnover intentions can exhibit varying degrees of significance, but it is essential to recognize that even when this association is not particularly strong, enhancing job performance can still yield important benefits. One of the key advantages is the potential reduction in intentions to leave, which in turn, contributes to improved organizational performance. It is vital to note that the relationship between turnover intentions and job performance may be influenced by a range of individual and organizational factors. For example, employees with high levels of job performance may be more likely to receive offers for better-paying or more desirable positions elsewhere, which could increase their intentions to leave their current organization. Overall, while the link among turnover intentions and job performance is complex and may be affected by a range of factors, it has been suggested that high levels of turnover intentions are generally associated with lower levels of job performance. However, some studies have found an insignificant relationship between these variables, highlighting the need for continued research in this area.

EI is a critical factor for success in the banking sector. Employees with high levels of EI are better equipped to handle their emotions, understand the emotions of others, and build strong client relationships, which ultimately contribute to better business performance and client satisfaction. The literature suggests that developing EI, creating a positive work environment, and improving job performance are critical factors for improving organizational performance and retaining employees in the banking sector. Organizations can establish a work environment that promotes employee engagement, job satisfaction, and commitment to the organization, which can ultimately lead to better organizational performance and growth. One implication is that organizations in the banking sector should prioritize the development of EI among their employees. This can be achieved through training and development programs that focus on improving emotional awareness, emotional regulation, empathy, and social skills. By

developing EI, employees are better equipped to manage stress and job demands, build positive interpersonal relationships, and improve their job performance, which can lead to higher levels of job satisfaction and lower intentions to leave the company.

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# Impact of Green Pricing and Green Promotion on Buying Behaviour of Hypermarket Consumers

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## Abstract

Consumer buying behaviour (CBB) in Pakistani hypermarkets can be influenced by green pricing and green promotion by providing environmentally friendly products at competitive prices. This study intends to examine how green pricing and green promotion affect consumer buying decisions in Pakistani hypermarkets. A total of 185 questionnaires out of 220 were retrieved, with an 84% return rate, from different hypermarkets in Peshawar, Pakistan. AMOS 28 was employed to perform advanced structural equation modelling (SEM) analysis enabling a comprehensive examination of the relationships between green marketing practices, including green promotion and green pricing, and CBB. The measurement model was utilized to evaluate the instrument's reliability and validity before the structural model was determined. The outcome showed that green pricing and promotion had a positive and significant association. Green pricing also had a substantial impact on CBB. The findings also point to a considerable and favorable influence of green promotion on CBB. Because the study is limited to the Peshawar area, it may not be able to extrapolate its findings to other contexts. In addition, the study only considers the effect of green pricing and promotion on customer behaviour ignoring other factors like personal views and attitudes that can also influence consumer behavior.

**Keywords:** *green price, green promotion, consumer buying behaviour, hypermarkets, Pakistan.*

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## 1. Introduction

Traditional marketing concepts and philosophies have substantially transitioned toward embracing social and environmental issues in recent decades. Consumer awareness of environmental issues, changes in governmental regulations, and escalating concerns about climate change are just few causes of this transition. Customers are becoming more interested in environmental concerns, and businesses incorporating sustainability into their marketing strategy can strengthen customer connections (Luchs et al., 2010). According to Samaraweera et al. (2021), customers are ready to pay extra for environmentally friendly goods and services in many markets. Hence, businesses that support sustainability reap the rewards of higher profits and a devoted clientele. Modern marketers frequently use the "green marketing mix" to set their products and services apart from their rivals and obtain a competitive edge (Reints, 2019). Mahmoud et al. (2017) assert that a green marketing mix can assist businesses in developing a distinctive brand identity and differentiating their goods from those of their rivals. According to the Arseculeratne and Yazdanifard (2013), businesses employing a green marketing mix can boost client retention and revenue while fostering environmental sustainability. Through green marketing, businesses can improve their brand image and grow their market share. It may assist businesses in differentiating their goods and services, building a stronger brand identity, and gaining an edge over rival businesses.

Environmental awareness and concern have risen among people in Pakistan because of efforts by the government and organizations to raise awareness and the growing impact of environmental issues on people's daily lives (Tan et al., 2022). It is crucial to remember that environmental awareness and concern can fluctuate significantly amongst different demographic groups and across the nation's regions. Younger people may be more worried than older generations, and urban dwellers may be more conscious of environmental issues than rural citizens. However, many enterprises still see environmental sustainability in Pakistan as an extra expense rather than a competitive advantage (Qalati et al., 2022; Ahmad et al., 2021). For instance, in the study of Ali et al. (2022) on the variables affecting Pakistani businesses' adoption of green marketing, businesses encounter several obstacles when applying green marketing, including a lack of customer knowledge and a need for more infrastructure and resources to support sustainable operations. The findings also indicated that price, product quality, and store environment are the most significant variables impacting consumer buying

intention. However, as environmental challenges become known in Pakistan, buyers are more interested in sustainable consumption. According to Zia et al. (2021), Pakistani customers are becoming more environmentally conscious and willing to buy goods from sustainable businesses. Chen et al. (2023) suggest hypermarkets concentrate on offering premium goods at affordable rates and creating a welcoming shopping experience to enhance consumer buying intention.

Many studies have been conducted on the impacts of green promotion, green pricing and CBB (i.e. Sohail, 2017; Delafrooz et al., 2014; Kumar and Ghodeswar, 2015) but research on the effects of green pricing and promotion on CBB in the context of Peshawar hypermarkets is still very limited (Hayat et al., 2019). Peshawar is one of the largest cities in Pakistan with a populace of around 3.4 million (Haq et al., 2021). Therefore, researching the effects of green pricing and promotion on CBB in this area may offer insightful information about consumer behavior and preferences. Although studies on green consumer behavior and green marketing in Pakistan have been conducted (Hashim et al., 2019; Majeed et al., 2020; Soomro et al., 2023; Iqbal et al., 2023; Akbar et al., 2023; Muhammad et al., 2023), there has been little research specifically on the effects of green pricing and green promotion on CBB in this context. Rather than offering a thorough understanding of the features that influence green purchasing behavior in the hypermarket, most existing studies on green consumer behavior and green marketing in Pakistan are narrow in scope and have focused on industries or products. Hence, this study aimed to close this research gap by analyzing the effect of green pricing and promotion on CBB at Peshawar hypermarkets.

This research will aid businesses and policymakers in better understanding of environmentally sustainable consumption patterns in general. Although there were no studies on this subject in Peshawar, similar studies in other settings or areas can offer insightful information about how well green pricing and promotion tactics might affect consumer purchasing decisions. Additionally, an in-depth investigation in Peshawar could help advance an understanding of regional buying behavior and the usefulness of green marketing tactics in this situation. First, the study may show green marketing techniques persuade consumers to choose environmentally friendly goods and services aiding Peshawar hypermarkets in creating persuasive marketing efforts that appeal to customers and promote sustainable purchasing behavior. Second, the study may increase consumer knowledge on the value of sustainable

consumption and the contribution of green pricing and promotion in encouraging sustainable consumer behavior. Finally, the study may aid Peshawar hypermarkets in determining the best methods of informing customers about green pricing and promotion strategies. It would make it simpler for customers to find and buy environmentally friendly goods and services, which might benefit the environment.

## **2. Literature review**

### ***2.1. Green Marketing Mix***

The term "green marketing mix" describes applying marketing techniques to encourage consumers to utilize environmentally friendly goods, services, and behaviors. Focusing on sustainability and environmental responsibility does not appear; this strategic approach integrates the traditional marketing mix elements of product, price, place, and promotion (Polonsky & Rosenberger, 2001). The trend of the green marketing mix signifies a pronounced shift in today's business landscape towards prioritizing environmental sustainability and corporate social responsibility (CSR). This trend is characterized by an increasing adoption of green marketing strategies by companies, driven by consumer demand for eco-friendly products and a growing global awareness of environmental challenges (Kotler & Keller, 2016). Companies are embracing the principles of the green marketing mix across various facets of their operations to meet these evolving demands. In the realm of green product, companies are dedicating substantial efforts to the development of eco-friendly products. These products are designed with sustainability at their core, incorporating environmentally friendly materials, reducing waste throughout the manufacturing process, and extending product lifespans (Kotler & Armstrong, 2018). A company's ability to distinguish its goods and services from rivals gives it a competitive edge (Chen & Chang, 2013). In this sense, eco-labeling, packaging, and green product design are essential in informing customers of the product's positive environmental impact (Kim and Han, 2010).

On the concepts of green pricing, companies are strategically positioning themselves in the market. They strive to offer green products at competitive prices, often optimizing their production and supply chain processes to minimize costs (Polonsky & Rosenberger, 2001). Simultaneously, some companies adopt an eco-premium pricing strategy, charging higher prices for products with sustainability attributes, emphasizing their superior quality, durability,

or reduced environmental impact (Shaukat and Ming, 2022). Customers are becoming more environmentally concerned and are prepared to pay a premium price for eco-friendly products, which has increased the importance of the green marketing mix (Abdullah et al., 2018).

### ***2.2. Green Price and Green Promotion***

Green pricing is a strategy used to market environmentally friendly products and encourage customers to make more environmentally conscious purchases (Machová et al., 2022). The study of Begum et al. (2021) shown that consumers are willing to pay a premium for eco-friendly items perceived to have higher value or social benefits. In another study, Ansu-Mensah (2021) examined the relationship between pricing, promotion, and customers' willingness to pay for green products, revealing a significant positive correlation between green pricing and advertising effectiveness. Therefore, it is imperative for businesses to implement both green pricing and promotion tactics to encourage consumers to spend in environmentally friendly products. Chen et al. (2023) argue that the impact of eco-friendly pricing and promotion on the adoption of green products underscores the moderating role of environmental concerns. Hence, the decision to adopt eco-friendly products is significantly influenced by both pricing and promotion efforts. Businesses should consider consumers' environmental concerns when crafting their green marketing strategies (Ali and Ahmad, 2016). Similarly, research on the effects of green pricing and promotion on Indian consumers' inclination to make green purchases has shown that these strategies have a positive impact on green buying intentions (Zhuang et al., 2021). Therefore, this study posits that:

*H1. There is a substantial correlation between green pricing and the promotion.*

### ***2.3. Green price and Consumer Purchasing Behavior***

It has been established in many studies that green pricing significantly influences customers' green purchasing decisions. For instance, Vazifehdoust et al. (2013), Pope (2021) and Shabbir et al. (2020) found that buyers are more likely to choose eco-friendly goods and services when given green price options. Customers pay more for goods and services that are ecologically friendly. Green pricing can impact customers' buying decisions and motivate them to make more environmentally friendly options (Zhang & Dong, 2020) and they are willing to spend more for goods that are marketed as environmentally friendly.

Green pricing can motivate businesses to adopt more environmentally friendly practices (Zhuang et al., 2021). Businesses that incorporate green pricing methods into their strategies often demonstrate a heightened commitment to sustainability and environmental responsibility. They prioritize sustainability by selecting or developing eco-friendly products, seeking environmentally responsible suppliers, and actively reducing waste. These companies promote transparency by providing consumers with information about the environmental benefits of their products and invest in eco-friendly practices within their own operations, such as using renewable energy sources and adopting waste reduction measures. Moreover, they educate consumers about the value of sustainable choices and often collaborate with environmental organizations and seek certifications to reinforce their commitment to sustainability.

Ottman et al. (2006) reiterate that green pricing can lower greenhouse gas emissions by incentivizing customers to choose green goods and services. Some consumers with a smaller carbon footprint pay more for goods and services. It shows that green pricing can help to encourage sustainable consumption and lessen environmental harm (Petro, n.d.). Green pricing is typically part of a long-term sustainability plan, reflecting a deep-seated dedication to minimizing environmental impact and contributing to a more sustainable future. It is a helpful tool for pushing businesses to adopt sustainable practices and a more environmentally conscious mindset. Hence, green pricing can improve a company's sustainability. Given the arguments from previous studies, this study posits that:

*H2. Green pricing influences green purchasing behavior of consumers.*

#### ***2.4. Green Promotion and Consumer Purchasing Behavior***

Niu and Chen (2018) refer marketing campaigns that emphasize a product or service positive environmental effects, such as lowering carbon emissions or promoting sustainable habits, as green promotion mix. According to Chen and Chang (2013), customers exposed to green promotion messages are more inclined to buy ecologically friendly items because green marketing strategies can inspire them to adopt environmentally friendly habits and raise their understanding of environmental problems (Sharma, 2021). Consumers view businesses that promote sustainability as being more socially conscious and reliable (Gelderman et al., 2021). This perception can improve brand loyalty and encourage good word-of-mouth referrals.

Hossain and Rahman (2018) believe that a green promotion can be a potent instrument for influencing consumer behavior toward green products and enhancing the reputation of businesses. Hence, this study argues that:

*H3. Green promotion positively influences green purchasing behavior of consumers.*

### ***2.5. Green pricing, green promotion and consumer buying behavior***

Zhang (2023) refers CBB as the purposeful decision made by customers to select goods and services that favorably influence the environment. Chekima and Chekima (2019) found that social norms, personal beliefs, and environmental awareness can all impact consumers' green shopping decisions. For instance, the study of Parker et al. (2022) revealed that customers are more inclined to make green buying when they believe a product or service has a significant environmental impact. Additionally, customers are more inclined to buy environmentally friendly goods if they are of equivalent quality and worth to conventional goods (Guerreiro et al., 2023). According to Gonzalez-Benito and Gonzalez-Benito (2006), several variables such as product availability, pricing, and labeling, might impact consumers' green purchasing decisions. For instance, consumers worried about the environment may find certified ecologically friendly products more appealing (Ern et al., 2000). A critical shift in consumer behavior is the adoption of green purchasing practices, which reflects an increase in environmental awareness and a willingness to support sustainable consumption habits (Sharma et al., 2022).

### ***2.6. Theoretical framework***

A well-known social psychology theory, Theory of Planned Behavior (TPB), contends that the primary influences on someone's behavior are their attitudes, subjective norms, and sense of behavioral control. This theory argues that a person's attitudes toward environmentally friendly goods, the social norms surrounding such goods, and their sense of behavioral control can all impact their willingness to engage in green purchasing behavior (Ajzen, 2020). By considering these factors, the study aimed to gain insights into the drivers of consumer behavior in hypermarkets regarding green pricing and green promotion.

The Value-Belief-Norm (VBN) Theory is another pertinent theory that contends a person's values, beliefs, and norms affect their conduct. This theory explains that an

individual's environmental values, opinions regarding how their actions affect the environment, and social norms concerning environmental responsibility can all impact their willingness to buy (Kaiser et al., 2005). In this study, the VBN theory shed light on how consumers' environmental values and beliefs influenced their engagement in CBB with respect to eco-friendly products promoted through green pricing and green promotion.

Moreover, the Social Marketing Theory offers a framework for comprehending how marketing tactics can encourage change, including green consumer behavior. According to this concept, marketers can influence consumer behavior by utilizing a variety of marketing instruments, including product design, price tactics, and promotional messages (Peattie & Peattie, 2003). In this study, this theory explored how the implementation of green pricing and green promotion within hypermarkets influenced consumer choices and behaviors related to environmentally friendly products.

### **3. Methodology**

#### ***3.1. Measurement***

In this quantitative study, the green price and the green promotion are the independent variables. Using the tool by Hashem and Al-Rifai (2011), it measured the green promotion through six-item questionnaire and the green price through a three-item researcher-developed questionnaire. On the other hand, the dependent variable is measured by eight-item questionnaire related to CBB (Rezai et al., 2012; Chiu et al., 2013). All the variables were measured by 5 Likert scale, where 5 represents a strong agreement, and 1 represents a strong disagreement.

#### ***3.2. Participants and data gathering***

A questionnaire was used to gather data from 185 respondents in Pakistan's Peshawar city customers who are interested in buying ecologically friendly products. The study employed purposive sampling technique by deliberately selecting respondents who expressed a strong interest in purchasing ecologically friendly products. This approach is driven by the study's core objective to comprehensively explore the behaviors and preferences of individuals inclined towards eco-friendly purchase. By focusing on this specific demographic, the study aims to reduce unwanted variability in responses, enhance the practicality of data collection, and ensure that its findings are particularly relevant to businesses and policymakers seeking



insights into environmentally conscious consumer behavior. The screening questions aim to ensure that the participants satisfy the requirements for inclusion in the study.

The study included 185 buyers, aged 21 to 50, from 3 hypermarkets of Peshawar, Pakistan, that actively incorporate green marketing practices, specifically green pricing and green promotion, into their business strategies. The hypermarkets meeting the criteria of offering green pricing and green promotion were the only included in the study. Among the participants were 88 women and 97 men (52.4 and 47.6%, respectively). The typical age of respondents was between 31 and 40 (26.5%), and the average participant income was over \$55,000 (37.3%). The 125 (67.6%) of the respondents were married and 52 (28.1%) were unmarried. In terms of educational qualifications, 25 (13.5%) were bachelor's degree holders, 95 (51.4%) have master's degree and 16 (8.6%) with MPhil.

### ***3.3. Structural equation models***

A two-stage Structural Equation Modeling (SEM) analysis, beginning with the measurement model, was carried out in the study using AMOS version 28. Item loading, internal consistency, and convergent validity were used to evaluate the measurement model's accuracy and dependability (Schumacker & Lomax, 2010). The degree of correlation between an observed variable and the related latent variable is item loading. The loading of an item was deemed adequate if it was 0.5 or above. The measuring model's internal consistency was assessed using composite reliability scores; a score of 0.7 indicates a high level of reliability. The average extracted variance (AVE) was used to assess convergent validity, which is the degree to which various indicators of the same construct are connected. A score of 0.5 or higher denotes good convergent validity (Hair et al., 2010). The findings presented are congruent with accepted procedures for assessing the validity and reliability of instruments used in research investigations. These procedures are frequently employed to guarantee the accuracy and dependability of the data gathered.

### ***3.4. Normality test***

The skewness-kurtosis method ensures that the variances are normal (Hair et al., 2010). As indicated in Table 1, all skewness and kurtosis values are below their "3" and "8" cut-off (Schumacker & Lomax, 2010; Byrne, 2016).

**Table 1***Assessment of normality*

Items	Mean	Std. Deviation	Skewness	Kurtosis
Price1	4.173	0.82246	0.983	0.734
Price2	4.2595	0.70536	0.79	0.729
Price 3	4.1227	0.74107	0.329	0.618
Promo1	4.0919	1.04631	1.394	1.502
Promo2	4.0486	0.78215	0.43	0.369
Promo3	4.1027	0.74107	0.329	0.618
Promo4	3.4865	1.19377	0.22	1.204
Promo5	3.9351	0.8884	0.53	0.411
Promo6	3.2595	1.16923	0.038	1.264
CBB1	3.8703	0.93508	0.423	0.707
CBB2	3.7405	1.08734	0.519	0.723
CBB3	3.9676	0.88405	0.461	0.59
CBB4	3.9892	0.98901	0.83	0.152
CBB5	3.9135	1.01247	0.746	0.224
CBB6	3.9946	0.83729	0.439	0.491
CBB7	4.0649	0.86358	-0.587	-0.421
CBB8	3.7838	1.05643	0.591	0.623

### ***3.5. Measurement model***

CFA is used to evaluate how well the proposed model fits the data, and it shows that the model accurately captures the underlying construct. In this study, constructs for indicators with loadings of less than 0.4 were eliminated. Although a loading of 0.7 or greater is typically advised for a powerful indicator, this is a widely recognized standard for acceptable indicator loadings. Eliminating indicators with low loadings can help enhance the model's overall fit and validity. The model must, however, continue to be theoretically and conceptually valid and the remaining indicators must continue to measure the same underlying construct (Hair et al., 2010).

#### ***3.5.1. Model fitness***

The study evaluated the model's goodness of fit using a variety of fit indices (Hair et al., 2010). These fit indices included the RMSEA, RMR, AGFI, GFI, NFI, CFI, and CMIN/DF

measures of fit, each of which provided a different level of fit. Additionally, each of these indices had a different threshold value considered appropriate for determining a good match. A model is typically regarded as having a good fit if the RMSEA is less than 0.08, the CFI and TLI are more than .90, and the RMSR is less than .08 (Byrne, 2016). The study examined a standardized covariance matrix, modification indices, and standardized regression weights (factor loadings) as part of the refinement process to determine areas where the model may be improved (Hair et al., 2010). To increase the model's fitness, some indications from the initial measurement model were deleted based on the standardized regression weights. After lower-loading items were removed, there was 1 item from the green pricing scale, three items from the green promotion, and four items from the scale of CBB. The adjusted measurement model appears to have a good fit, according to the fit indices presented in table 2. Except for the chi-square value, which was significant, all fit indices are above or near the suggested levels.

**Table 2**

*Model's measurement findings*

Fit Index	Value Recommended	Original Measurement Model	Improved Measurement Model
CMIN / DF	Less than 5	8.08	2.94
GFI	> .90	.786	.918
AGFI	> .80	.657	.854
TLI	> .90	.656	.916
CFI	> .90	.710	.944
(NFI	> .90	.684	.919
RMSR	< .08	.95	.05
RMSEA	< 0.08	.196	.08

### 3.5.2. Construct reliability and validity

Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE) are suggestions made by Hair et al. (2010) for evaluating the reliability, convergent validity, and discriminant validity of constructs in a measurement model. According to table 3, all the three constructs have strong internal consistency, as shown by Cronbach's alpha values higher than 0.70. The Cronbach's alpha values are precisely 0.811, 0.868, and 0.916 for green price, green promotion, and consumer purchasing behaviour, respectively. Additionally, the CR values for each of the three constructs are higher than the suggested cut-off point of

0.70, demonstrating the validity of the assessment items for each construct. The AVE values for each concept exceed the suggested cut-off point of 0.50. The values of AVE are 0.709, 0.649 and 0.577 for the green price, promotion, and CBB variables, respectively. These findings show that the constructs successfully measured what they are supposed to. Furthermore, it is demonstrated that the measurement items accurately assess the study's focus components by the measurement model's good reliability and validity.

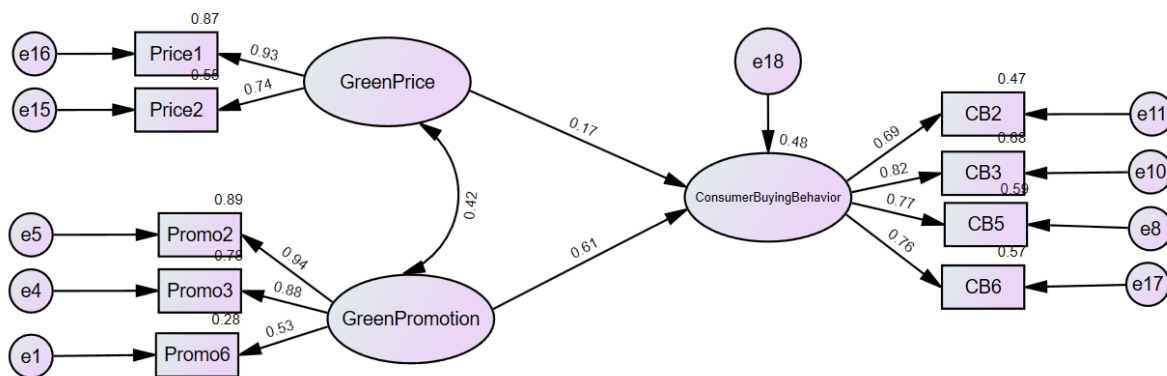
**Table 3***Constructs reliability and convergent validity*

Constructs	CR	CA	AVE
Green Price	0.828	0.811	0.709
Green Promotion	0.84	0.868	0.649
Consumer Buying Behavior	0.845	0.916	0.577

**Table 4***Discriminant validity*

	Gpromo	CBB	Gprice
Green Promotion	<b>0.805</b>		
Consumer Buying Behavior	0.678	<b>0.760</b>	
Green Price	0.417	0.423	<b>0.842</b>

### 3.6. Structural Model

**Figure 1***AMOS version 28 was used to calculate the results.*

The structural model results were like the revised measurement model, showing the good fit model. The chi-square was substantial ( $\chi^2 = 70.757$ ,  $df = 24$ ,  $P = .000$ ), and the other

fit indices were observed within their threshold values:  $\chi^2/df = 2.948$ , GFI = .918, CFI = .944, NFI = .919, AGFI = .854, RMR = .05 and RMSEA = .08.

#### 4. Results

The study measured the effects of green pricing and green promotion on the CBB (figure 1 and table 5). Since the t-value is more significant than 1.96 and p-values are lower than 0.05, all the hypotheses are significant. Therefore, a positive correlation exists between green pricing and CBB ( $\beta = .171$ ,  $t=2.131$ ,  $p .03$ ); H1 is accepted. Similarly, the relationship between green promotion and CBB is significant ( $\beta = .607$ ,  $t= 5.601$ ,  $p = ***$ ); H2 was approved. In addition, H3 is also accepted since a positive and substantial link exists between green pricing and promotion ( $\beta = .196$ ,  $t= 4.102$ ,  $p .05$ ). The effect for endogenous latent variables can be computed as 0.26 (higher), 0.13 (moderate) and 0.02 (low/poor) for R2 values. The green pricing and promotion together account for 48.4% of the variance in CBB as the R2 value for CBB is 0.484. The R2 value for CBB is higher than 0.26; therefore, the model has a high effect and is fit.

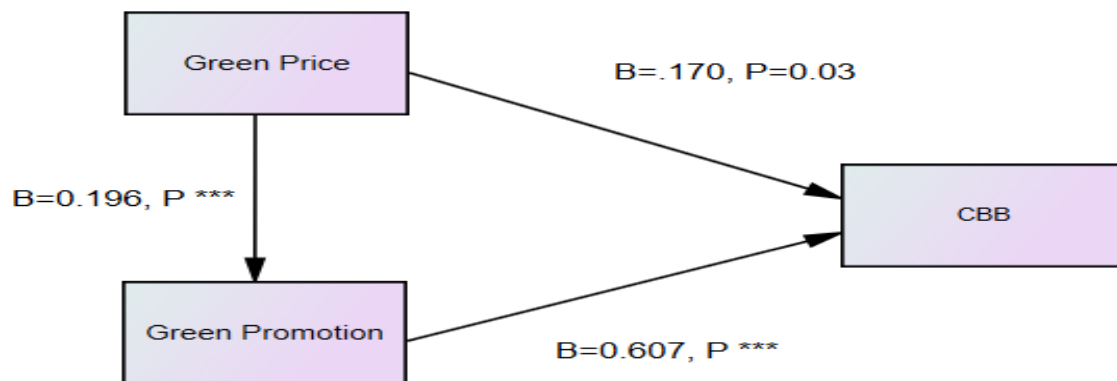
**Table 5**

*Hypothesis testing*

Hypothesis Relationship	Standardized Estimates	t-value	p-value	Decisions
CBB<--- Green Price	.170	2.131	.03	Accepted
CBB<--- Green Promotion	.607	5.601	***	Accepted
Green Price <--> Green Promotion	.196	4.102	***	Accepted

**Figure 2**

*Structural model*



## 5. Discussion

The CBB category provides critical insights into how green marketing practices, encompassing both green promotion and green pricing, influence customer purchasing decisions. The results strongly support the hypothesis (H1) that there is a significant and positive correlation between green pricing and CBB. The respondents indicate that green marketing practices have positively influenced their buying behavior. Additionally, respondents report making changes in their buying behavior to favor eco-friendly products in recent years, aligning with H1. This shows consumers are more inclined to adopt environmentally friendly habits and buy eco-friendly goods even if prices of the products rise. In a similar study, Luchs et al. (2010) several tests carried out concluded that products linked to higher degrees of environmental responsibility were likely chosen by consumers even though green prices were higher. Customers who value their health and the environment may be more inclined to pay for green items. However, elements like product quality, availability, and marketing activities, may impact the link between green price and CBB (Namkung & Jang, 2017).

An association between green promotion and CBB is positive and significant (H2) implying that green marketing and promotional tactics can persuade customers to adopt environmentally friendly practices and purchase eco-friendly products. The findings in the green promotion category reveal that a significant majority of respondents are aware of and recognize green promotional efforts implemented by the hypermarkets. Moreover, a noteworthy outcome of respondents confirm that green promotions have a positive influence on their buying decisions. This significant result aligns with H2, emphasizing the effectiveness of green marketing strategies in motivating customers to buy eco-friendly product. Additionally, the study found that discounts and special offers on eco-friendly products are the most preferred green promotions, suggesting that specific green promotional methods, such as discounts, resonate well with consumers. Green promotion can significantly influence CBB because there is a significant and positive association between green promotion and CBB. The behavior of consumers in terms of their buying selections can be positively impacted when hypermarkets run environmentally friendly promotions. It might result to heightened environmental awareness and concern and a desire to support ecologically beneficial behaviors and goods. It is significant to note that the nature of this relationship, including its strength and

direction, can change based on several variables including the type of promotion, the target market, and the goods or services being provided. Green marketing and consumer purchasing patterns are significantly positively correlated.

Within the green pricing, the research uncovers valuable insights into the customers' perception and response to pricing strategies of eco-friendly products. Notably, more than half of the respondents express a willingness to pay a slightly higher price for products with eco-friendly attributes. This willingness to pay a premium supports the hypothesis (H3) that consumers may perceive environmentally friendly items as more valuable and worthy of a higher price. Furthermore, respondents perceive eco-friendly products as offering good value for their money, indicating that customers recognize the added value beyond the environmental benefits. According to the survey, consumers exposed to green promotions are more inclined to make ecologically friendly purchase. This finding emphasizes the significance of green promotions in business marketing plans to promote consumers' sustainable purchasing behavior (Nguyen-Viet, 2022). Green marketing and promotional methods may persuade consumers that environmentally friendly items are more valuable and worthy of a higher price if there is a positive and substantial association between green price and promotion (H3). It may result to a rise in the demand for environmentally friendly goods and a change in consumer behavior toward more sustainable ones. In the study of Wang and Wong (2020) conducted in China, consumers exposed to green advertising were shown to be more inclined to pay more for eco-friendly hotels than consumers who were not. Another notable finding is that respondents express a willingness to switch brands to support environmentally responsible ones, emphasizing the positive association between green promotion, green pricing, and CBB, which shows consistency with H1, H2, and H3. These findings collectively suggest that green marketing practices effectively encourage environmentally conscious CBB offering opportunities for both sustainability and business growth.

## **6. Conclusion**

The study effectively demonstrates the persuasive power of various green marketing techniques in influencing consumers to opt for environmentally friendly products and services. This is inferred from the positive and significant correlation between green marketing practices, including green promotion and green pricing, and CBB. The findings support the

idea that these strategies are impactful in motivating sustainable purchasing choices, thus achieving the first objective. The study also contributes to increasing consumer knowledge in Peshawar regarding the value of sustainable consumption and the role that green pricing and promotion play in promoting sustainable consumer behavior. The results, which indicate that a substantial proportion of respondents perceive eco-friendly products as valuable and are willing to pay a premium for them, suggest that consumers are recognizing the significance of sustainability. This aligns with the second objective of enhancing consumer awareness and understanding of sustainable consumption. Finally, the study assists Peshawar hypermarkets in determining effective methods of informing customers about green pricing and promotion strategies. This is inferred from the findings that show the positive impact of these strategies on customer behaviour. Hypermarkets can use this information to tailor their communication and promotional efforts effectively, thereby achieving the third objective of the study.

The study discovered that green prices and marketing significantly affect consumer purchasing behavior in Pakistani hypermarkets. Two results show that to draw in and keep green customers, Pakistani hypermarkets should concentrate on two aspects of the green marketing mix (pricing and promotion). In addition, the study discovered strong associations between green pricing and consumer purchasing patterns, as well as between green pricing and green promotion. It was determined that the measuring model for the study's constructs was valid and reliable, which means that the assessment items correctly measured the constructs. The correlations between the constructs were further supported by the structural model, which likewise demonstrated a firm fit. The results imply that using green marketing techniques, such as green pricing and promotion, may favor consumer behavior in hypermarkets. According to a positive and substantial association between the two variables, customers are more inclined to buy environmentally friendly or sustainable goods when their prices rise. It may result from several things, including the fact that customers are becoming more environmentally conscious and prepared to pay extra for goods that share their values or that businesses are investing in sustainable processes and passing the cost on to customers. Businesses can convey to customers their commitment to sustainability and social responsibility by using green pricing tactics to market their eco-friendly goods and services. Customers are more likely to buy goods from businesses that share their values and views, which can result to higher sales. Green marketing can favorably impact the price consumers are ready to pay for ecologically friendly



items. Businesses that successfully market the environmental advantages of their goods may set themselves apart from rivals and command a higher price for their wares. It is crucial to remember that the efficiency of green promotion may differ across various industries and geographical areas.

The results of this study have significant policy and marketing ramifications. Marketers can use the findings to create successful green marketing plans that satisfy the demands and preferences of Pakistani hypermarket customers. Similarly, policymakers can use the findings to encourage environmentally friendly practices in the retail industry and encourage customers to make sustainable purchasing decisions. However, the study poses some drawbacks. First, the study's scope is restricted to the Peshawar environment, so extrapolating its findings to other contexts may not be possible. Second, the study ignores other elements that can affect consumer behavior, such as individual beliefs and attitudes, and solely focuses on how green pricing and advertising affect consumer behavior. Therefore, future research can solve these constraints by performing cross-cultural studies to investigate the influence of green prices and marketing on consumer behavior in various cultural contexts. Future studies can also consider individual values and attitudes in the consumption behaviors of consumers buying environmentally friendly goods.

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# Moderation Effects of Meagre Information Between Promotions and Usage of Traditional Medicine

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## Abstract

Underpinned by the attribution theory, this study examines the moderating effect of meagre information in the relationship between promotions and consumer usage of traditional medicine (TM) in Central Uganda. Traditional medicine is trendy despite efficacious concerns raised by various empirical studies. While extant literature presents several motivations for the newfound TM patronage, more is needed to discuss the role of promotions in this regard. Relatedly, the literature needs to include the contribution of meagre information and how it moderates the relationship between TM promotion and consumer usage. Using Cochran, a sample of 369 TM users was drawn from the cosmopolitan districts of Central Uganda. SPSS 25.0 and Amos 22.0 were used to clean and analyse the data, while Andrew Hayes 3.5 was used to test for moderation. The Johnson-Neyman test showed that increasing meagre information to -2.2503 creates an effect; at this point, TM promotions on consumer usage are moderated. The study concludes that the potential for inconsistencies, inadequacies and incompleteness in information related to traditional medicine is immense. Whilst the Ugandan government is still challenged to provide ideal regulatory frameworks to ensure THPs' conformity to required safety, quality, and efficacy standards, they should make efforts to license and certify all THPs. Concerned regulatory bodies like the Uganda National Drug Authority and Uganda Communications Commission should regulate TM media communications to prevent the uneducated exaggeration of TM safety issues. They should streamline information disclosure to TM consumers and prohibit unbalanced public advertisements.

**Keywords:** *traditional medicine usage, promotion, meagre information, moderation.*

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## 1. Introduction

The perception that traditional medicine (TM) is consumed by the elderly, illiterate and the very poor has since changed. The new paradigm shift has seen younger, highly educated urban dwellers and the very religious taking TM as an acceptable treatment option (Ameade et al., 2018; Ndhlala et al., 2011). Interestingly, some medical professionals also integrate TM modalities into their practices (Matole et al., 2021; Chitindingu et al., 2014), and others refer their patients to consult with traditional health practitioners (THPs) for certain illnesses (Dania, 2011). According to WHO (2023), over 40% of pharmaceutical products globally draw from traditional knowledge, and 88% of all countries use TM (WHO, 2019), most of whom are in Africa (James et al., 2017). Accordingly, African communities have a long history of TM usage, passed from generation to generation (Mukungu et al., 2016). In Uganda, TM is still famous and widely used despite conventional medicine's advancement and wide acceptability (Tugume et al., 2016; Nyeko et al., 2016). According to WHO (2019), the use of indigenous TM among Ugandans is estimated to be between 60–79%.

The TM, often interchangeably known as complementary and or alternative medicine (CAM) (Lotfia et al., 2016), is any form of medicine, practice, treatment, product, technology, knowledge system or ceremony outside of conventional medical practice aimed at preventing and treating illness and promoting wellbeing (Gall et al., 2019). It is indigenous knowledge of a given community and their experiences in the context of the local culture and environment (WHO, 2023). It covers, among others, herbal medicines, acupuncture, yoga, and indigenous therapies and is dynamic, varying from region to region, depending on the prevailing situation (WHO, 2019). Several probable reasons push for increased TM usage, including claims on its efficacy, the general belief that TM is safe because of its natural origin and the dissatisfaction with modern medicine (Welz et al., 2018; Lotfia et al., 2016; Ekor, 2014). In addition, for Ugandans especially, there are cultural inclinations towards TM; it is accessible and affordable, and the perceived approachability of THPs (Omara et al., 2020; Rutebemberwa et al., 2013).

There has been increased publicity for TM (Kigen et al., 2013). Adegoju (2008) attributes this to the widespread availability of media platforms and the stiff competition in the TM market. According to Rutebemberwa et al. (2013), the highly commercialized TM by several competing THPs could be a motivation for its high usage among Ugandans. Several THPs have taken to various media platforms to run TM promotions like adverts (on TV/Radio,

Newspapers and posters), sales promotions (price reductions, gifts and free trials), public relations (media tours/relations, sponsorships) and personal selling (on streets, buses, burial grounds). In addition, more THPs are buying airtime on radios and television stations and making bold claims about how they cure different ailments, including what conventional doctors cannot (Omoera et al., 2011). Furthermore, while the role of TM promotions towards TM usage has been and still is being investigated globally (Okumu, 2017; Adegoju, 2008; Omoera et al., 2011), the role of the inadequate and meagre information presented explicitly in the TM promotions is mainly lacking in the literature.

The contribution of scant and fragmentary information in TM promotions towards TM consumption must be considered. When presented with insufficient information before a transaction, it can be assumed that a consumer or seller could base his/her buying or selling decision on incomplete information, resulting in inefficient outcomes. Concerning medicines, promotions are often associated with quackery and are known to rely on information asymmetry (Burton, 1991). Extant literature has examined the extent of information asymmetry, particularly for credence products such as conventional Medicine (Wells et al., 2011), but more needs to be established for TM. The information asymmetry between THPs and TM users often propels consumers to search for essential information about the actual TM attributes, particularly effectiveness and safety, from various sources such as adverts. This allows THPs to take advantage of and manipulate or exaggerate the promotional information. For example, Feucht and Patel (2011) postulate that CAM/TM providers hardly disclose any known, suspected, unknown, short-term and long-term health implications related to the usage of their therapies. Likewise, Wang et al. (2011) argue that in delivering health care, health providers may hold or conceal some vital information and may not collect and communicate clinical and health information to specify what would constitute appropriate provision for the need of care relative to patients. In the case of TM, the information is often presented inadequately with jargon, confusing facts and ambiguous messages (Okumu, 2017), yet TM benefits are exaggerated (Adegoju, 2008). Unfortunately, regulations for the safety assessment of TM in Uganda are partly the same as those for conventional pharmaceuticals (WHO, 2019) and no specific regulatory status is given to TM. According to Tibugwisa (2019), no regulations or recommendations for sealing herbal medicine and no post-marketing survey are planned.

With the rampant TM promotions and the potentially conflicting information, the consumer needs to be more assured about the accuracy and quality of TM. This information could lead to many users making incorrect decisions (Doborji & Hamed, 2016). The current study investigates the issues on how flawed and deficient information affects consumer usage of TM. First, the study examines the role of TM promotions on consumer usage behaviour and then the moderating effect of meagre information in this relationship. Meagre information is conceptualised as scantiness in quantity and quality of crucial information consumers need to decide whether to buy TM.

## **2. Literature review**

### ***2.1. The attribution theory***

When individuals encounter events or behaviours, they use causal attribution to make sense of them. The attribution theory is a perception theory that takes the lay observer's viewpoint as he/she sorts and interprets incoming information and infers causality (Robertson & Rossiter, 1974). The theory is attributable to Kelly (1967), who defined it as a theory about how causal explanations are made. It is a set of conceptualisations that describes the cognitive processes involved when an individual assigns an observable event to its underlying cause(s) (Settle & Golden, 1974). In their 1974 research, Settle and Golden applied the attribution theory in promotions. They hypothesised that advert readers would evoke attributional processes to interpret the validity of message claims. Consumers were expected to attribute the promotional claims to either the actual characteristics of the product or to the advertiser's desire to sell the product (Settle & Golden, 1974). In this regard, the audience must decide why the claims were made. According to Gotlieb and Sarel (1991), consumers who attributed message claims to the actual characteristics of the product were more likely to be confident in the claims and form more favourable attitudes toward the brand and vice versa.

Information can be classified as biased or unbiased, accurate or inaccurate, favourable or unfavourable (Chang & Kinnucan, 1991). According to Eagly et al. (1978), two informational biases could influence the audience's causal attributions: 1) the communicator might have to report bias in which he/she is unwilling to communicate an accurate representation of reality; 2) the audience could believe the communicator might have knowledge bias in which his/her message-relevant information is untrue. Consumers are expected to seek product information from various sources if they believe it would increase their information state (or attribution stability) more than data from alternate sources.

The attribution theory has also been investigated in sales promotion and how it affects consumer attitude formation by Sawyer and Dickson (1984). Sawyer and Dickson concluded that consumers who consistently purchase a brand because of a price-off deal might attribute their behaviour to the external promotional incentive rather than a favourable attitude toward the brand. By contrast, when no external incentive is available, consumers are more likely to attribute their purchase behaviour to favourable underlying feelings about the brand. Other studies on the same subject were done by Raghurir and Corfman (1999), who examined whether price promotions affect pre-trial evaluations of a brand. Offering a price promotion is more likely to lower a brand's evaluation when it has not been promoted previously than when it has been frequently promoted. Likewise, promotions are more likely to result in negative evaluations when they are uncommon in the industry (Belch & Belch, 2016). Studies by Montaner and Pina (2008) showed that promotions could decrease perceptions of quality and discount brand image. Relatedly, price promotions may inhibit a brand's trial or negatively impact brand attitudes in certain situations (Belch & Belch, 2016).

This study employed the attribution theory to explain how TM users attribute the TM promotions (sales promotions, personal selling, adverts and public relations) they get exposed to daily. According to Smith and Hunt (1978), the attribution theory is an ideal framework for predicting consumer behaviour.

## ***2.2. Background Literature***

Consumer behaviour refers to the activities, actions and influences of people who purchase and use products to satisfy their personal or household needs and wants (Hoffmann, 2007). It is the pursuit undertaken when obtaining, consuming and disposing products and services (Blackwell et al., 2001). Consumer usage behaviour requires understanding the actions directly involved in obtaining, consuming, and disposing of products and services, including the decision processes that precede and follow these actions (Ting-Tan & Freathy, 2011). It concerns all aspects of purchasing behaviour, from pre-purchase activities to post-purchase consumption, evaluation and disposal activities (Kotler & Keller, 2011). According to Lawan and Zanna (2013), it combines customers' usage consciousness and external incentives, resulting in behaviour remodelling.

Understanding consumer behaviours for TM is essential as it predicts market trends and points to preferences for various TM products. According to Koh and Goh (2021), the demand to use and pay for TM has dramatically increased. Globally, a sizable fraction of the

rural poor relies on TM for their primary health care despite globalization and modernization (WHO, 2023). This care is not only close to homes but accessible and affordable. Many consider it culturally acceptable and well-trusted (Sofowora, 1993). Consumer behaviour towards TM usage, mainly among African communities, is often instigated by push factors. These include, among others, poverty, limited access to primary care (particularly for rural dwellers), less comprehensive health coverage, ill-equipped or poorly staffed healthcare facilities and TM promotions (Logiel et al., 2021; Ssempijja et al., 2020). Consumption of TM varies significantly from country to country, as it is influenced by factors such as culture, history, personal attitudes and philosophy (WHO, 2013). Similarly, the TM knowledge among THPs is acquired differently and is often passed orally from the elders to the young (Ekor, 2014).

Recently, there has been an influx of THPs joining the TM trade due to concomitant unemployment and the increased competition in the TM market. This has created suspicion of deceptive promotions (García-Nieto et al., 2021; Omoera, 2011). Promotions are generally deemed deceptive if they create, increase or exploit false beliefs about a product/service's performance (García-Nieto et al., 2021; Prendergast et al., 2009). Most adverts are persuasively targeted at luring consumers into patronising the goods, services or ideas advertised (Asemah & Edegoh, 2013). In addition, the effort to entice buyers is often made up of many claims whose truth is often hard to establish (Nuseir, 2018).

The healthcare promotion debate has always been contentious (Rod & Saunders, 2009; Hasman & Holm, 2006). Proponents designate the promotional role, particularly advertising, as a critical information purveyor contributing to marketplace efficiencies (Belch & Belch, 2016). Likewise, promotions empower consumers to make choices and facilitate access to needed healthcare products (Mason & Scammon, 2000). As a promotional strategy, advertising is a powerful tool in creating product awareness in the mind of a potential consumer to make an eventual purchase decision (Latif & Abideen, 2011). Likewise, promotional incentives may provide positive reinforcement and help move consumers toward the regular purchase of a brand (Belch & Belch, 2016).

Critics of healthcare promotions, on the other hand, argue that the nature of healthcare products and the possibly long list of contraindications makes it hard, if not impossible, to fully disclose pharmaceutical properties in a 15 or 30-second television spot (Santas et al., 2020; Beales, 1991). The health information made available to patients through commercial

marketing is often inadequate, biased and untruthful (Mackert et al., 2011). When medical information is supplied, it is often presented vaguely without any evidence supporting the promotional claims (Dukes et al., 2001). Besides, with the proliferation of digital marketing for healthcare products, especially herbal medicine, consumers can be left confused with nowhere to verify the authenticity of the claims (Owens et al., 2014; Gaslin et al., 2008). Promotions can be irritating and deceptive, downplaying product risks while overstating product benefits (Woloshin et al., 2001). Where information is inadequate or incomplete, users depend on clues such as promotions to prompt their internal cognition to decide whether to buy a product (Zaltman, 2003). Hence, this study hypothesise that,

*H1: Promotions of traditional medicine positively affect consumer usage behaviours.*

It can be observed that traditional medicine is a credence good, and credence products are more prone to information asymmetries because of the intangible attributes that consumers may need to evaluate even after purchasing and consuming (Nayyar, 1993). As a result, there is often pre-purchase information scarcity for these products in which the consumer is incapacitated to access or interpret the product's quality attributes before purchasing (Wells et al., 2011). These asymmetries persist in healthcare partially because of the health system's idiosyncrasy, which often relates to the user's inability to assess care needs accurately (Wang et al., 2011). They thus become fundamental barriers to rational and informed choices (Liberati & Magrini, 2003), as those who lack the information (patients) are often bound to make worse decisions than those who have it (health providers). Consequently, pre-purchase information is scarce for these products, as consumers cannot access or interpret the product's quality attributes before purchasing (Wells et al., 2011).

The asymmetries in information between THPs and TM consumers will almost certainly emerge because of the wide variations of TM attributes, the scarcity of information concerning its production techniques and the ignorance of most TM consumers. Whenever consumers need to evaluate key characteristics of healthcare goods before purchase, they continually experience uncertainty about the value of these goods as they approach the decision point (Nagler et al., 2011). In this case, consumers attempt to reduce cognitive dissonance and the psychological discomfort related to uncertain decisions by seeking exposure to information that reinforces the decision (Bloom & Reve, 1990). In their desperation to reduce the risk of making an adverse selection, TM users may be forced to search for more information from



several sources, among them friends and family, advertisements, and the internet. Unfortunately, these sources can be questionable since their proponents need to be better researched, and their practice has partially been passed on from generation to generation without clinical trials. Additionally, TM information is rarely documented, and the THP's claims can hardly be verified.

From the preceding perspective, one can arguably suspect that THPs manipulate even the little information available and induce demand using this meagre information. Therefore, this study hypothesise that

*H2: Meagre information is associated with consumer usage of traditional medicine.*

While it is plausible to assume that the relationship between promotions and consumer usage of traditional medicine can indeed exist, this relationship could be significantly modified and or enhanced by the existence of inadequate, untruthful, meagre and or misinformation. Meagre information in this study relates to un-researched/unauthenticated and unverifiable information, fraud (to create false impressions), inconsistency in claimed facts and misleading (untruth about product features). According to Hasan et al. (2019), misleading advertising is a profitable activity that includes giving false information, lying, deceiving, or cheating consumers to make them choose what they would not otherwise have chosen. Unfortunately, it can always be assumed that consumers are naive because they always believe misinformation from misleading advertising (Glaeser & Ujhelyi, 2010).

Owing to the forgoing perspective, it is essential to empirically test the moderating role of meagre information between TM promotions and the consumer usage behaviour of TM. This investigation is vital to TM consumers, THPs and other interested parties in deepening their understanding of the overwhelming demand for TM and its likely consequences. Likewise, this study gives policymakers valuable insights to design better laws protecting Ugandans, promoting healthy TM communications, and safeguarding unscrupulous competition among the THPs. This study hypothesises that

*H3: Meagre information moderates the relationship between promotions and consumer usage of traditional medicine.*

## Methodology

### 3.1. Setting

The study population was TM users in the cosmopolitan districts of Central Uganda. A sample size of 369 participants was calculated using Cochran's (1977) formula, taking the proportion at 60% (De Coninck, 2016). Kampala, Mukono, Luwero, Wakiso, and Mpigi districts were purposively selected because of their closeness to the Capital City. Researchers worked with Community Development Officers (CDOs) who had worked with the National Council for Traditional Healers and Herbalists' Association (NACOTHA) in registering THPs. The CDOs purposively introduced the researchers to herbalists renowned for their longevity in their respective practices and also had a large clientele. TM users were recruited from THPs' clinics and must have been exposed to TM promotions from various platforms.

### 3.2. Measurement

Modifications were made for promotions using the scale items by Gaziano and McGrath (1986). Items for consumer usage behaviour were also developed in part adapted from Friedman and Gould (2007) for TM inquiry or search for TM information. Item questions captured the search behaviours of TM users, particularly after exposure to TM promotions. TM usage or proneness to TM usage was partly developed by Baumgartner and Steenkamp (1996), and item questions captured how TM users generally consume TM. These included, among others, future usage of TM, using TM as a complementary drug, using TM as a first choice in treating an ailment, using TM concurrently with conventional medicine or even using TM against the advice of medical personnel. Seven items tapped information search behaviours, and six tapped proneness properties of usage behaviours.

A five-point Likert scale was employed, ranging from (1) strongly disagree to (5) strongly agree. The researchers developed the fragmentary or meagre information items with the guidance of Wang et al. (2011), who assert that 'in delivering health care, health providers may hold or conceal some vital information and may not collect and communicate clinical and health information to specify what would constitute appropriate provision for the need of care relative to patients'. The items included, among others, '*The TM I buy always has expiry dates*'; '*I often get a precise TM dosage from my THP*'; '*My THP tells me the side effects of TM*'; '*My THP always diagnoses me before giving me any treatment*'; '*THPs deliver on their promises as seen/heard in the media*'. Items were reverse coded before analysis to capture information incompleteness and inaccuracy.

### 3.3. Data Analysis

SPSS 25.0 and Amos 22.0 were used to clean and analyse the data, while Andrew Hayes 3.5. was used to test for moderation. Linearity was tested, and all relationships between the dependent and the independent variables were linear (Sig = .948 for meagre information and Sig = .834 for promotions). In table 1, the results show that all minimum standard cut-off points of P-close, GFI, AGFI, TLI, and CFI for all variables were met. Similarly, the Root Mean Square Error of Approximation (RMSEA) for each variable met the recommended standard ratio of less than or equal to .08.

**Table 1**  
*Summary of Measurement Model Results*

Variable	CMIN	DF	PCLOSE	CMIN/ DF	GFI	AGFI	NFI	TLI	CFI	RMSEA	AVE
			≥.05	<3	≥.95	≥.90	≥.95	≥.95	≥.95	≤.08	≥.5
<b>Promotions</b>	125.59	71	.686	1.769	.954	.932	.982	.990	.992	.046	0.89
<b>Meager I</b>	13.545	8	.555	1.693	.988	.968	.983	.987	.993	.044	0.64
<b>CB</b>	50.632	19	.093	2.665	.966	.935	.979	.981	.987	.067	0.71

As shown in table 2, the values of Cronbach's alphas and those of the composite reliability were above the required threshold of .70 (Nunnally & Bernstein, 1994), which revealed internal consistency of all items. Results for the Average Variance Extracted (AVE) were between 0.64 and 0.89, way above Fornell and Larker's threshold of 0.5, which meant that the measurements had good discriminant validity.

Chi-square (CMIN), DF (Degrees of freedom), Goodness of fit (GFI), Adjusted Goodness of fit (AGFI), Normed fit Index (NFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Average variance extracted

**Table 2**  
*Confirmatory Factor Analysis*

<b>Construct</b>	<b>Item</b>	<b>Standard loading</b>	<b>Cronbach's alpha value</b>	<b>Composite reliability</b>	<b>AVE</b>
<b>Promotions</b>	<b>16 items</b>		<b>.950</b>	<b>.92</b>	<b>.89</b>
Advertising	PA1	.875	.975	.80	0.894
	PA2	.903			
	PA3	.893			
	PA4	.902			
	PA5	.895			
Sales Promotions	SP1	.905	.970	.83	0.851
	SP2	.911			
	SP3	.857			
	SP4	.884			
	SP5	.882			
Public relations	PR1	.844	.961	.75	0.888
	PR2	.843			
	PR3	.866			
Personal selling	PS1	.897	.965	.75	0.895
	PS2	.881			
	PS3	.908			
<b>Meager Information</b>	<b>9 items</b>		<b>.861</b>	<b>.82</b>	<b>0.64</b>
Incomplete information	II1	.776	.874	.72	0.762
	II2	.750			
	II3	.817			
	II4	.716			
	II5	.699			
	II6	.809			
Information inaccuracy	IA1	.689	.703	.80	0.771
	IA2	.866			
	IA3	.749			
<b>Consumer behavior</b>	<b>13 items</b>		<b>.914</b>	<b>.89</b>	<b>0.71</b>
TM inquiry	TMI1	.736	.826	.77	0.771
	TMI2	.734			
	TMI3	.746			
	TMI4	.828			
	TMI5	.839			
	TMI6	.850			
	TMI7	.639			
TM Usage	TMU1	.543	.791	.81	0.673
	TMU2	.658			
	TMU3	.753			
	TMU4	.683			
	TMU5	.639			
	TMU6	.743			

*AVE = Average Variance Extracted*

## 4. Results

### 4.1. Demographics

Demographic results in table 3 revealed that more females (60.21%) visit and buy TM. By their gender, females are more inclined to seek more healthcare than males. The results also indicate that adults of all ages, especially those in child-raising age groups, buy TM. About 75% of the study participants had yet to gain a university degree or diploma, which reveals the low levels of education among most TM users. About 78% had used TM for the past five years, indicating that most TM users are often past users. Finally, about 95% of the study participants confirmed exposure to a TM advert or promotion thrice a day. This indicates the rampancy of TM promotions all over the media.

**Table 3**

*Demographic characteristics of respondents*

Demographics	Frequency	Percentage (%)
Gender		
1. Males	113	30.79
2. Females	254	60.21
Age		
1. 18-30	81	22.07
2. 31-40	105	28.61
3. 41-50	117	31.88
4. 51-above	64	17.44
Education		
1. Primary	149	40.6
2. High School	127	34.6
3. Diploma	52	14.17
4. Degree	28	7.63
5. Masters'-Above	11	3
For how long the participant used TM		
1. Less than a year	33	9
2. About 3-5 years	47	12.8
3. More than 5 years	287	78.2
Exposure to TM promotions		
1. More than thrice a day	348	94.82
2. Once a day	16	4.36
3. Once a week	3	0.82

### 4.2. Moderation

Moderation was done using Andrew F. Hayes process macro 3.5 (model 1) at bootstrap sample 5000. The study assessed the relationship between promotions and consumer behaviour

(H1), then the relationship between meagre information and consumer behaviour (H2) and finally, the moderating role of meagre information on the relationship between promotions and consumer behaviours (H3).

Model: 1

Y: Consumer behaviours

X: Promotions

W: Meagre Information

Sample Size: 367

**Table 4**

*Model summary*

R	R-sq	MSE	F	df1	df2	p
.6504	.4231	.3122	88.7340	3.0000	363.0000	.0000

The results indicate that the regression model is statistically significant ( $R=0.65$ ,  $R\text{-sq}=0.423$ ,  $F=88.73$ ,  $p < .05$ ). The model explains up to 42.3% of consumer behaviour. i.e., 42.3% change in consumer behaviour is accounted for by promotions, meagre information, and the interaction term.

**Table 5**

*Model*

	coeff	se	t	p	LLCI	ULCI
constant	2.9999	.0335	89.6266	.0000	2.9341	3.0657
Promo	.3376	.0302	11.1788	.0000	.2782	.3970
MI	-.1819	.0417	-4.3639	.0000	-.2638	-.0999
Int_1	.0815	.0318	2.5653	.0107	.0190	.1440

From the model shown in table 5, both promotions and meagre information are significant predictors of consumer behaviours ( $p < .05$ ). The findings reveal a positive and significant relationship between promotions and consumer behaviour ( $\beta = .3376$ ,  $t = 11.1788$ ,  $p < .001$ ) supporting H1. This means a positive change in promotions is associated with a positive change in the consumer usage behaviours of TM users. Likewise, a negative and significant relationship between meagre information and consumer behaviour ( $\beta = -.1819$ ,  $t =$

-4.36,  $p < .001$ ) supports H2. This means the more meagre or inaccurate the TM information gets; the more likely people would use TM.

From the moderation analysis, the interaction between TM promotions and meagre information on consumer behaviour is positive and statistically significant ( $p < .05$ ), supporting H3. This implies that meagre information positively moderates the relationship between TM promotions and TM consumer behaviours. i.e. meagre information amplifies or strengthens this relationship.

**Table 6**

*Product terms key*

Int\_1: Promotions x MI

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0105	6.5808	1.0000	363.0000	.0107

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Focal prediction: Promotions (X)

Mod var: MI (W)

The unconditional interaction was tested to show the change in R-square due to the interaction ( $x*w$ ), and it was also significant ( $p = 0.107$ ),  $R^2\text{-chng} = 0.0105$ . So, the interaction significantly impacts the endogenous variable.

### *Johnson-Neyman intervals and simple slopes analysis*

**Table 7**

*Conditional effects of the focal predictor at values of the moderator(s)*

MI	Effect	se	t	p	LLCI	ULCI
-.8572	.2677	.0412	6.4950	.0000	.1866	.3487
.0000	.3376	.0302	11.1788	.0000	.2782	.3970
.8572	.4075	.0401	10.1572	.0000	.3286	.4863

At the lower level of the moderator, i.e. as meagre information decreases, the effect size decreases. However, as meagre information increases, its effect on consumer behaviours increases. Note: At the average level of meagre information, i.e. .0000, the effect is positive (.3376) on consumer behaviour. The effects are statistically significant at all levels ( $p = .000$ ).

Moderator value(s) defining Johnson-Neyman significance region(s):

Value	% below	% above
-2.2503	.2725	99.7275

**Table 8***Conditional effect of focal predictor at values of the moderator*

MI	Effect	se	t	p	LLCI	ULCI
-2.4782	.1356	.0851	1.5927	.1121	-.0318	.3029
-2.2907	.1508	.0796	1.8958	.0588	-.0056	.3073
-2.2503	.1541	.0784	1.9665	.0500	.0000	.3083
-2.1032	.1661	.0741	2.2423	.0255	.0204	.3118
-1.9157	.1814	.0687	2.6411	.0086	.0463	.3165
-1.7282	.1967	.0634	3.1029	.0021	.0720	.3213
-1.5407	.2120	.0582	3.6410	.0003	.0975	.3265
-1.3532	.2273	.0532	4.2707	.0000	.1226	.3319
-1.1657	.2425	.0484	5.0087	.0000	.1473	.3378
-.9782	.2578	.0439	5.8700	.0000	.1715	.3442
-.7907	.2731	.0398	6.8611	.0000	.1948	.3514
-.6032	.2884	.0362	7.9657	.0000	.2172	.3596
-.4157	.3037	.0333	9.1229	.0000	.2382	.3691
-.2282	.3190	.0312	10.2079	.0000	.2575	.3804
-.0407	.3343	.0303	11.0459	.0000	.2747	.3938
.1468	.3495	.0304	11.4866	.0000	.2897	.4094
.3343	.3648	.0317	11.4949	.0000	.3024	.4272
.5218	.3801	.0341	11.1624	.0000	.3131	.4471
.7093	.3954	.0372	10.6325	.0000	.3223	.4685
.8968	.4107	.0410	10.0279	.0000	.3301	.4912
1.0843	.4260	.0452	9.4252	.0000	.3371	.5148
1.2718	.4413	.0498	8.8626	.0000	.3433	.5392

When meagre information is increased, there comes the point or level at which the impact of TM promotions on consumer behaviours will be significant. For example, in table 8, when meagre information is increased to -2.2503, the effect of promotions on consumer behaviour will be moderated. If further reduced to -2.2907, it will cease to be significant.

**Figure 1**

*Virtualization of the interaction term*

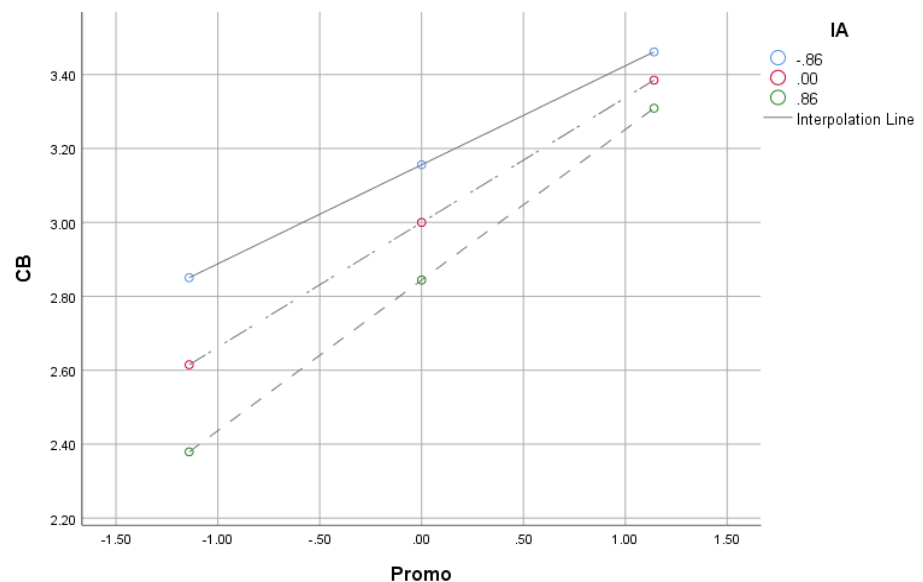




Figure 1 indicates the various levels of interactions. That is, at higher meagre information, the gradient is much steeper. This means that the effect of promotions on consumer behaviours is much more substantial at higher meagre information. In other words, meagre information amplifies the relationship between TM promotions and consumer behaviour.

## 5. Discussion

There are several underlying reasons for TM usage in Central Uganda, including being female, having low levels of education, and having used TM in the past. Haskell et al. (2011) posit that females are more invested in healthcare than males because of their gender and healthcare needs. According to Mothupi (2014), females are the majority of users of TM because of their caregiving role, especially in Africa. Likewise, frequent users of TM gain experience and confidence in using TM as long as they continually draw benefits from it. If a particular TM worked on solving the consumer's previous problems, they form a positive attitude and are likelier to continue using TM. Some consumers admittedly use the same drug to cure other ailments different from what it fixed previously.

The study revealed a positive and significant relationship between TM promotions and consumer usage behaviour. This finding implies that as THPs continuously promote their medications using various promotional strategies, they constantly create public awareness, influencing consumer usage. TM promotions are perceived beneficial because they; (1) encourage TM users to plant the various advertised herbs in their compounds, (2) encourage users to use the known TM that could be revealed in the promotions (in case it grows in their neighbourhoods), and (3) visit some of the advertising THPs for those that may not know the herbs or cannot have the complete combinations as directed in the promotions. Additionally, TM promotions ignite search behaviours among TM users for more information among friends and families about the advertised brands. Most TM users admitted that they are likely to search for more information after being exposed to a promotion.

The association between meagre information and TM consumer usage behaviours was significantly negative. This finding suggests that the more biased, vague, misleading, and abstract TM information becomes, the more consumers will likely use it. This finding suggests that when consumers are told partial truths such as 'TM has no side effects', they develop relief tendencies and confidence to use it. It can be noted that most THPs hardly talk of any side

effects, yet others would insist that TM has no side effects. The less information the THPs share, the more likely the TM users grow a preference for it and would gladly use or buy it. Most promoting THPs make exaggerated claims of TM benefits that are unverifiable and not thoroughly researched. They often use rhetorical communication and make false guarantees to persuade the listeners. For example, THPs deploy testimonies by people who claim to have been healed by the practitioners. The motivation is usually to create legitimacy and credibility and instill confidence in prospective customers.

From the findings, most TM users in Central Uganda need to be more educated, which could increase their vulnerability to misleading TM information. Through TM promotions, THPs exploit the consumers' ignorance and continually share false and misleading information about non-toxicity. According to the attribution theory, also called the 'naïve psychology', a consumer could attribute the message claim in an advert to either the advertiser's desire to sell the product or to the actual characteristics of the product (Settle & Golden, 1974). In the case of TM, most TM users could likely attribute the promotions to actual product characteristics because of the vagueness in the presentation of TM information.

The TM market has often been characterised by scant information, and many users readily take TM without bothering about any crucial information. Currently, most TM products are sold with barely any details of indications, contraindications, expiry dates, special warnings, special precautions for use, possible interaction effects, etc. However, since most TM users have long-formed perceptions that TM has no dosage and no side effects or toxins, they often do not expect THPs to communicate this information before giving them treatments. Additionally, some TM users are still determining whether or not they get a precise diagnosis. Interestingly, some even argued that these THPs use psychology and God-given divine power to diagnose. For this, they only expect a THP to scientifically interpret and communicate the clinical results after treating them. Finally, many TM users would not bother whether TM has government seals to show approval. Nevertheless, the regulating authority has left the market unattended, and anyone can join the trade minus any approvals or clearances.

## **6. Conclusion and implications**

Undoubtedly, TM usage among Ugandans will certainly continue to increase. Therefore, TM consumers, THPs and policymakers must understand the meagre information that underlay this market. It is also imperative for all stakeholders to especially note the moderating effects of meagre information in the relationship between promotions and

consumers' usage behaviour. Unfortunately, the gaps concerning TM promotions still need to be answered, particularly for the illiterate masses. From the findings, it can be anticipated that Ugandans make ill-informed decisions to take TM instead of going to hospitals because of the highly commercialized and promoted TM. It suffices to note that most TM users are poor and desperate due to a flawed healthcare system in the country and incapacitated to verify any messages they get exposed to. The controversies are further compounded by TM's promotional discourses, which are psychologically coercing, misinforming and cunning. So, desperation, illiteracy and naivety prey many TM users on deceitful promotions.

The Government should mandate that consumers are exposed to fair and balanced TM information concerning their illnesses, side effects and available treatments. In addition, the Ugandan National Drug Authority (NDA) needs to streamline information disclosure to TM consumers, contributing to the imperfect information in this highly competitive market. Finally, concurrent with efforts to create quality products that are both safe and effective, the Ugandan Government must formulate standards, policies and regulations governing the production and use of TM. These are necessary to promote and maintain good practice, at least among the appropriately educated THPs, for the benefit of the population. The government should make efforts such as licensing and certifying all THPs. They are also challenged to provide ideal regulatory frameworks to ensure that THPs conform to the required safety, quality, and efficacy standards. In a related vein, the concerned regulatory bodies, such as the NDA and Uganda Communications Commission (UCC), should be charged with regulating TM media communications to prevent the uneducated exaggeration of safety issues.

### **Authors' contribution**

This paper is part of Sarah Nabachwa's PhD thesis, which was written under the supervision of Professor Nixon Kamukama.

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### **Ethical clearances**

The Mbarara University of Science and Technology Research Ethics Committee cleared the study. However, further approval was sought from the Uganda National Council for Science and Technology (UNCST).

### **Conflict of interest**

The authors declare no conflict of interest

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