MEASURING THE IMPACT OF PERCEIVED AUTHENTIC LEADERSHIP ON INNOVATIVE WORK BEHAVIOR: THE DUAL MEDIATION MODERATION ANALYSIS

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Abstract

This study set out to investigate the impact of perceived authentic leadership on employees' innovative workplace behavior. The study also suggested looking at how job autonomy shapes the association between workers' innovative work practices and their perception of authentic leadership. Supervisors provided insights into employees' innovative behavior, while employees reported other aspects. A total of 384 middle and functional management employees from information technology companies were surveyed. The data was then subjected to a number of studies using SmartPLS 4 and SPSS, including structural equation modeling, confirmatory factor analysis, ANOVA, and reliability analysis. The results of structural equation modeling showed a strong predictive link between workers' innovative activity at work and their perception of authentic leadership. Furthermore, the relationship between innovative work behavior and perceived authentic leadership was found to be significantly mediated by employees' creativity. Significantly, the association between employee creativity and creative work practices was found to be moderated by social cognitive theory. The study concludes that perceived authentic leadership support has a critical role in improving staff performance in the information technology sector, which in turn promotes overall firm growth.

Key Words: Perceived authentic leadership, Innovative Work Behavior, Employee Creativity, Job Autonomy

1. Introduction

Background of Study

In today's fiercely competitive business landscape, organizations must implement innovative work behavior as a strategic approach to enhance quality and maintain competitiveness (Asbari &

Wijayanti, 2020; Sopa, 2020). Innovative work behavior, which encompasses critical thinking and the pursuit of new ideas, not only fosters creativity but also encourages employees to find effective and efficient solutions to problems (Novitasari, 2021). Previous studies highlight the importance of employees exhibiting innovative work behavior as valuable assets to any company (Fikri, 2020). The absence of this behavior can lead to a decline in overall work performance, making it crucial for companies to prioritize hiring individuals with innovative work behavior (Basuki, 2020). Experts emphasize that innovative diversion at work is essential for an organization's ability to remain competitive and dynamic.

As an Information Technology (IT) sector in Pakistan navigates the challenges and opportunities of a rapidly evolving landscape, understanding the intricate relationship between perceived authentic leadership and innovative work behavior becomes a practical necessity for organizational success (Arpatech, 2019). This study aligns with several Sustainable Development Goals (SDGs), particularly those related to economic growth, innovation, and industry.

Over the past few years, the information technology sector in Pakistan has experienced significant growth and its market size has greatly expanded. Despite this growth, there are many challenges for the industry to remain innovative and competitive in delivering top-notch services to its vast customer base (Raykov, 2014). The information technology sector must remain innovative to keep up with the changing market and growing consumer needs (Arpatech, 2019). Employee creativity is a key to innovation, and creating an environment that fosters and encourages innovation and creativity is essential (Prameswari & Purwanto, 2020). Authentic leadership theory may provide insights into how leader characteristics influence innovative work behavior, and research in this area may

benefit organizations in the Information technology sector. However, despite the importance of innovation for long term success, there is less research on how leaders encourage innovation within the organizations (Avoli, 2004; Walumbwa, 2018). Therefore, it is needed to investigate the role of perceived authentic leadership in promoting innovation to establish a culture of innovation.

In the context of the Information technology sector, job autonomy can be essential for promoting innovative work behavior and employee creativity. Job autonomy refers back to the diploma to which employees have influence over their work and the independence to make decisions about how to perform the tasks (Lee & Choi, 2021). A previous study has shown that the job autonomy can moderate the relation between innovative work behavior and the employee creativity in the Information technology sector (El-Said, 2019). When employees possess a significant degree of job autonomy, they are more inclined to interact with innovative work behaviors and exhibit creative outcomes. This is because they have the freedom to experiment with different approaches and solutions, which may lead to the modification of innovational products and services. However, it is crucial to understand that there is nonlinear link between job autonomy and innovative work practices. While high levels of job autonomy can be beneficial, too much autonomy can also have negative effects on employee creativity (El-Said, 2019).

The research attempts to close the knowledge gap by empirically analyzing a unique and new approach in understanding employees in the Information technology sector of Pakistan, which has been previously overlooked in studies focused on the western world (Bahzar, 2019; Covelli & Mason, 2017). Specifically, study focuses on the contact of certain leading styles on innovative work

behavior in the context of Pakistan. This particular interest given the challenges employees face in maintain motivation and creativity during and after the global pandemic (Bahzar, 2019; Covelli & Mason, 2017).

The IT industry in Pakistan plays a significant role in the country's GDP growth, contributing 1% as reported by the Ministry of Information Technology (2023). However, the Global Innovation Index of 2023 ranked Pakistan's IT industry at a low 171st position. This disparity draws attention to a serious problem facing the sector: the promotion of innovation and creativity is severely lacking. The absence of authentic leadership declines innovative work behavior among employees, while inadequate job autonomy limits employees' control over their work, further hindering their creativity. This study aims to address these challenges by examining how these factors impact innovative work behavior of employees within Pakistan's IT sector.

2. Literature Review

Albert Bandura's Social Cognitive Theory (SCT) offers a valuable framework for understanding the dynamics in the information technology (IT) sector by emphasizing the role of innovative work behavior, perceived authentic leadership, and employee creativity. IT professionals often enhance their skills and adopt new practices by observing peers, mentors, and online communities, which helps them learn through modeling. Employee creativity believing in one's ability to effectively handle IT tasks plays a critical role in motivating and performing in areas such as coding, system design, and problem-solving. Furthermore, social factors like peer support and collaborative projects significantly influence IT professionals' creativity and innovation. Social Cognitive Theory, therefore, provides a comprehensive view of how personal, behavioral, and environmental factors interact to foster innovative work behavior

and creativity in the ever-evolving IT sector (Bandura, 2001; Li et al., 2020).

In research exploring the link between innovative work behavior (IWB), perceived authentic leadership (PAL), and employee creativity, Social Cognitive Theory (SCT) offers valuable insights. SCT suggests that learning takes place within a social context, driven by the interaction of personal factors, behavioral patterns, and environmental influences. Authentic leaders who are marked by transparency, ethical behavior, and consistency create an environment that nurtures both employee creativity and innovative work behavior among IT professionals. This supportive setting encourages employees to adopt innovative practices by modeling creative actions and offering constructive feedback. When employees view their leaders as authentic, they are more inclined to embrace these behaviors and feel more confident in their creative contributions. Thus, Social Cognitive Theory highlights that perceived authentic leadership can enhance innovative work behavior by utilizing social learning processes and strengthening individuals' belief in their creative abilities within the IT sector (Bandura, 2001; Leroy et al., 2020).

Social Cognitive Theory aims to understand and foster both individual and collective creativity, which involves the confidence in one's ability to organize and execute the actions needed to handle future situations. This framework clarifies how employee creativity affects their willingness to engage in innovative behaviors and how authentic leadership can reinforce this sense of creativity, thereby promoting a creative work environment. Recent research has shown that when leaders display authentic behaviors, employees feel more empowered and confident in their abilities, which boosts their innovative efforts and creativity (Newman et al., 2022). Thus, Social Cognitive Theory not only seeks to explain how

behaviors are acquired and maintained but also emphasizes the significance of a supportive social environment in nurturing innovative and creative behaviors in the workplace.

Job autonomy plays a vital role in moderating the relationship between perceived authentic leadership and employee creativity. By granting employees the freedom and control to explore new ideas and methods without excessive restrictions, job autonomy fosters a sense of ownership and intrinsic motivation (Ryan & Deci, 2000). Recent research highlights that environments characterized by authentic leadership and high job autonomy significantly boost employee creativity by providing a context where individuals feel empowered to experiment and take risks (Gong et al., 2013). Combining Social Cognitive Theory with the concepts of perceived authentic leadership and job autonomy offers a thorough understanding of how these elements together enhance innovative work behavior and employee creativity. This approach underscores the importance of a supportive social and organizational environment in nurturing creative potential, while also recognizing the moderating effect of job autonomy (Newman et al., 2022; Wang et al., 2023).

Research has shown that employee creativity plays a critical role in the long-term development and profitability of small and large enterprises alike (Laguna, 2019). In small organizations where the business owners typically also serve as a manager, their attitude and leadership style have a particularly significant impact on innovation. Previous studies have established the significance of managerial support for encouraging innovative behavior among employees (Ardana, 2016). In a meta-analysis examining factors that predict innovation among organizational members, (Hammond, 2020) found that immediate supervisors have an ability to stimulate innovation among their subordinates (Konga & Ramaiah,

2021). Previous studies have established the significance of managerial support for encouraging innovative behavior among employees (Databoks, 2021). Perceived authentic leadership theory suggests that authentic leaders can encourage innovation by promoting imagination and daring among their followers (Yukl & Gardner, 2019). Through high relational transparency, managers can openly express their support and value for their employees, abilities and build personal capital, which encourages employees to generate and use new ideas (Verawati & Hartono, 2020). Additionally, authentic leaders encourage a range of viewpoints and are more accepting of ambiguity, which empowers workers to question accepted workplace norms and see their leaders as reliable sources of feedback (Yukl and Gardner, 2019). Furthermore, unusually self-assured and fearless in taking chances and experimenting, authentic leaders can encourage creative activity in their staff (Hartono, 2020).

Studies have demonstrated that, through the mediation of variables including employee creativity, employee positive emotions, psychological resources, and attitudes, perceived authentic leadership is positively correlated with innovation (Asurakkody & Kim, 2020). Nonetheless, more investigation is required to examine the connection between employees' innovative activity and their perception of authentic leadership (Hartog 2010).

In light of the conversation above, the first hypothesis is put forth as,

H1: Perceived authentic leadership may significantly impact on innovative work behavior of employees.

In the last decade, perceived authentic leadership has become a crucial aspect of leadership in organizations. Leaders who are authentic can help their employees find significance and association, which is especially important in today's novel, chaotic

and dynamically changing work environment. Authentic leaders can introduce novel concepts that set their organizations apart from others. Additionally, because it gives workers the psychological stability and reinforcement, they need to feel inspired to share their ideas; perceived authentic leadership fosters creativity and innovation in the workplace. Research by (May and Ghosh, 2015) lend credence to the idea that workers' creativity is enhanced when they perceive authentic leadership. According to (Michie & Gooty 2005), by reducing their employees' sense of vulnerability, authentic leaders can also help their staff members become more authentic. In order to encourage creativity and novel thinking in the workplace, employees require the support and reassurance of their leaders, who can create a positive and transparent work environment (Vignoli 2018). By fostering relationships in the workplace that are reasonable, helpful, positive, and transparent, perceived authentic leadership helps to increase favorable attitudes among workers (Wong, 2010), which in turn promotes higher employee creativity. Employee creativity is positively correlated with moral and ethical viewpoints, according to research by Valentine (2011). This literature review leads to the following hypothesis:

H2: Perceived authentic leadership may be related to employee creativity.

An individual who exhibits innovative work behavior makes a conscious effort to implement novel and advantageous concepts, ideas, or practices inside a team, organization, or job role. Although the definition of creativity is the presenting of novel and practical ideas for goods, services, operations, and processes, creativity is also an essential component of the execution of innovative ideas. creative ideas are the foundation of creativity, according to Ven de Ven (2017), and this study suggests that creativity might encourage

people to operate in a creative manner. Amabile and Pratt's (2016) research indicates a clear relationship between an employee's creative work practices and their innovative work behavior.

H3: Employee creativity may be related to innovative work behavior.

The effectiveness and efficiency of an organization can be improved through the formation of novel ideas, which is referred to as the employee creativity. Employee creativity plays a significant role in this regard, and organization should encourage their employees to work hard and come up with breakthroughs. Leaders should encourage and value creative and innovative work in order to have a good effect on employees' creativity and innovation. Authentic leaders can motivate and enhance employee's creativity by setting performance standards, demonstrating confidence in employees and encouraging them to present fresh concepts and make use of cutting-edge methods for solving problems (Khalili, 2016). Authentic leaders play critical role in encouraging employee creativity and promoting innovation within the organization. (Baldegger & Gast, 2016) state that authentic leaders create and articulate a shared vision that inspires and appeals to employees. This along with intellectual stimulation encourages employees to think creatively and come up with the innovative solutions. Employee creativity is a foundational element of innovation and a raw resource required for corporate development (OECD, 2010). Employee creativity is essential for organizational success and efficiency and it can be refined to achieve innovative behavior among employees (Jong & Hartog, 2008). Thus, it is postulated that employees' perceptions of authentic leadership have a favorable impact on their creativity, which in turn encourages innovative work behavior.

H4: Employee creativity may significantly mediate the relationship

of perceived authentic leadership and innovative work behavior.

The degree of independence and freedom that employee is given over their work is known as job autonomy Hackman and (Oldham, 1976). In the workplace, autonomy is defined as a worker's sense of freedom to decide how to behave in relation to tasks, deadlines, and schedules with little guidance from superiors (Baard, 2004 & Deci; Ryan, 2002).

Innovative work behavior (IWB) is defined by (Klol and Linge, 2009) and (Jaskyte, 2004) as a complex pattern of activity exhibited by employees that results in the development, introduction, and use of original ideas. These skills give the organization a benefit. Employee job autonomy, or the right to work as easily as possible, is essential for encouraging creativity (Chung-Yan, 2010). Depending on the procedures and nature of the business, this autonomy may take many forms (Ryan & Deci, 2006). Through automation of processes, increased equality and transparency, regulatory compliance, and the resolution of labor shortages, workforce optimization a business strategy that integrates corporate performance metrics with human resource management has been demonstrated to enhance innovative work behavior (Vovk, 2021).To foster a work atmosphere that encourages innovative work behavior, the setting should be maximized for inclusive management and considerate behavior toward everyone (Abbas, 2022). Establishing a brainstorming wall that promotes individualism and facilitates the exchange of actionable ideas as well as the initiation of small-scale demonstrations against uncomfortable workplace practices is one method of integrating innovative behavior (Baruah & Paulus, 2019). This approach gives each person the autonomy to decide what is acceptable and what is not (Battistelli, 2019).

In addition, a mentor can help with communication by letting

someone bounce ideas off of someone else and select a team member they can work on a project with without feeling judged (Odongo, 2018). A place for self-reflection, moderation, and acknowledgment of those who think outside the box can be created by pushing staff members to try new things through presentations of unusual ideas, sharing of motivational articles, and group brainstorming, all of which promote social and psychological maturity (Brimhall, 2019 & Abbas, 2021). According to studies, autonomy is crucial for creative people and their projects since it boosts their self-esteem and gets rid of obstacles that keep them from being creative. Fulfilling employees' psychological needs and enabling them to be intrinsically driven can be made possible by management support for autonomy (Mumford, 2002). In contemporary businesses, the usage of self-managed autonomous teams has grown in popularity. According to (Ramamurthy, 2005), workplace autonomy affected creative people's sense of obligation to use their innate ability for innovation in both direct and indirect ways. According to (Axtell, Shalley, 2000), having autonomy and control over one's work environment fosters creative work habits and increases employee job satisfaction. It has been discovered that autonomy combined with well-defined goals increases the likelihood of creative results (Hackman & Oldham, 1976). Furthermore, (Song, 2012) hypothesized that work autonomy served as a moderating construct to explain inventiveness in the behavior that was creative.

This study emphasizes job autonomy as a critical component that directly affects employee creativity and acts as a spark to encourage innovation in committed employees. If employees aren't motivated to see the need of innovative thinking inside the organization which calls for independence or a high level of task-related autonomy their creativity might not necessarily result from

affective commitment. When strong affective commitment is paired with job autonomy, employee creativity may increase significantly. Therefore, the present study advances the hypothesis that worker autonomy at work plays a major role in the growth of innovative work behavior.

H5: Job autonomy may significantly moderate the relationship of employee creativity and innovative work behavior.

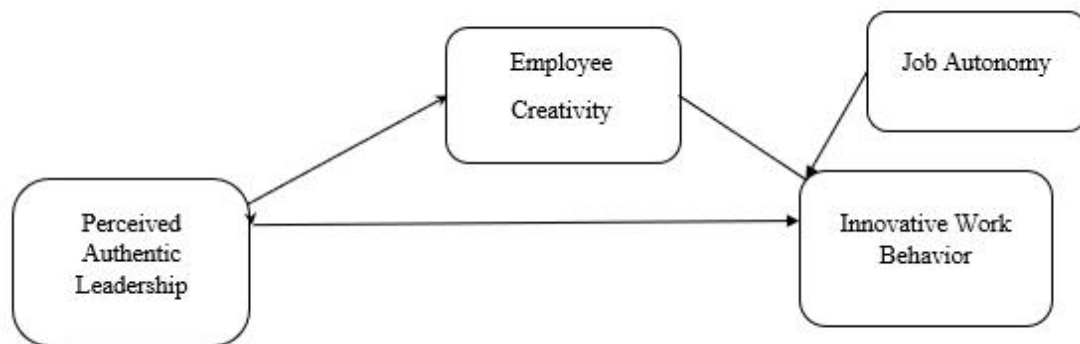One the basis of above literature review, the following framework can be used.

Figure 1: Conceptual Framework

3. Methodology

In order to find the answers to the research questions, the main goal of this study was to examine the direct, mediating, and moderating interactions between variables using a hypothesis testing approach. The purpose of the study is to examine the relationship that exists between innovative work behavior and perceived authentic leadership, with a focus on the contribution that employee creativity and job autonomy make to this relationship. In addition to a conceptual framework that elucidates the theoretical connections between the variables, the study used a descriptive research design. The present study employed a relational survey questionnaire to collect data, which will be examined to ascertain the moderating role of job autonomy and employee creativity as well as the relationship between innovative

work behavior and perceived authentic leadership.

In current study, a quantitative research method was employed, involving the collection of data through questionnaires, which analyzed using statistical tools such as Smart PLS and SPSS. Due to the limited time and resources available, a cross-sectional study design will be used, focusing on a single industry to ensure the accuracy of the findings. This research design approach was considered appropriate by Levin (2006) for situations where resources and time were constrained.

This study focuses on Pakistan's information technology (IT) sector, specifically targeting information technology companies' employees nationwide. The IT sector is chosen as the population of this research work because of its dynamic environment marked by continuous technological evolution. Information technology companies engage in perpetual software development, demonstrating a dedicated commitment to staying at the forefront of technological inventions. Considerable investments in research and development (R&D) contribute to ongoing experimentation with cutting-edge technologies, fostering continuous innovation. The information technology industry is known for its agility in adopting emerging technologies such as cloud computing, block chain, Internet of Things (IoT), and machine learning. Additionally, it promotes a culture of creativity, injecting fresh ideas and disruptive innovations.

In this study, a convenience sampling technique was utilized. Non-probability sampling techniques are frequently employed in research to test theoretical relationships without necessarily compromising the quality of the study (Hulland et al., 2017; Memon, 2017). According to Hair et al. (2019), convenience sampling involves selecting participants who are readily available and accessible to the researcher. This approach is particularly

advantageous when the exact size or composition of the target population is uncertain or difficult to determine. For instance, if the population is scattered or not well-defined, convenience sampling allows researchers to gather data without needing precise demographic details. In our organizations, data updates are not performed regularly, which makes it challenging for researchers to access an accurate list of employees. To avoid any kind of inconvenience, the convenience sampling strategy has been adopted in this research study. Furthermore, the limitations imposed by confidentiality requirements and the particular research aims also drove the selection of convenience sampling for this study.

Determining the appropriate sample size for a research study poses challenges, especially when the exact definite number of employees in the target population is not known. In addressing this issue, the present study employed the sample size calculation illustration provided by Krejcie and Morgan (1978) to estimate the required sample size. The study focused on the information technology companies with a combined estimated are 8516 out of which 90% companies located in four major cities Karachi, Lahore, Islamabad and Rawalpindi (Annual report of Ministry of Information technology of Pakistan 2021-22) .It was hard to approach the employees of all the registered information technology companies so by using convenience sampling techniques the sample size chosen and also utilizing the Krejcie and Morgan formula, a sample size of 384 employees was determined, and survey questionnaires were distributed through a Google-generated form for data collection. Collaboration with the HR departments of the selected IT companies ensured the accuracy of data collection. A convenience sampling approach was used to get the minimum sample size of 384 for this study. Every member of the population has an equal probability of being chosen using the convenience

sampling technique (Sekaran, 2001).

During the data analysis phase, SPSS and Smart PLS were used. Tests for reliability and correlation were carried out with SPSS. Smart PLS 4 was used to do regression analysis, moderation analysis, mediation analysis, and confirmatory factor analysis (CFA). Correlation analysis was used to look at overall correlations, direction, and significance. Regression analysis was used to regress the dependent variable on the independent variable, and confirmatory factor analysis was used to evaluate and validate the model's fitness. Various statistical tests were conducted using different software, namely Smart PLS 4, SPSS.

4. Results

The primary data, which consists of facts and figures, are interpreted using the quantitative method, which involves gathering data by sampling, observation, and measurement before analysis and interpretation in accordance with the findings. To examine the hypothetical model, Descriptive statistics, Karl's Pearson Correlation Coefficient test was performed on IBM SPSS Statistics and CFA and hypothesis testing was analyzed through Smart PLS 4 software. The SEM (Structural Equation Modeling) technique is used to analyze data because it is thought to be an accurate technique that produces precise results and helps to assess the validity of the gathered facts and figures (Ringle et al., 2005). A total of 384 responses were gathered with the help of a 5-point Likert scale questionnaire survey from the employees of different organizations in Pakistan to explore the effect of perceived authentic leadership on innovative work behavior. Out of 550 respondents from various companies, 500 actively participated, yielding a response rate of 90.91%. 500 is a sufficient sample size to continue the research because 300 is the criterion for a good sample size (Raza & Hanif, 2013; Comrey & Lee, 2013). A sample

size of 50 is deemed bad.

Demographics Characteristics

Table 1: *Gender*

Demographics	Frequency	Percentage %
Male	222	57.8
Female	162	42.2
Total	384	100

As listed in Table 1, 222 male's respondents to the survey (57.8%) and the rest of the 162 were female respondents (42.2%).

Table 2: *Age*

Demographics	Frequency	%
25-35	172	44.8
36-45	128	33.4
46-55	65	16.9
Above 56	19	4.9
Total	384	100

Table 2 represents that people aged between 25 to 35 years of age were 44.8 per cent, from 36 to 45 years were 33.4 per cent, 46 to 55 years were 16.9%, and above 56 were only 4.9 percent. Table 4.4 shows the ethnicity of different respondents of the study.

Table 3: *Education*

Demographics	Frequency	%
Intermediate	176	45.8
Graduation	128	33.3
Masters	72	18.7
Doctorate	08	02.8
Total	384	100

Table 3 represents the qualifications of different respondents to the research. It can be seen that 45.8 percent of the respondents have done intermediate, 33.3 percent have done graduation, 18.7 percent have completed masters and 02.8 percent of the

respondents have Ph. Ds.

Pearson Correlation Coefficient Test

The Pearson Correlation Coefficient Test was used to examine the data that had been gathered. This technique is used to determine the relationship between two variables and it also measures the direction and strength of that relationship. The r value is considered to interpret the strength of Pearson's Correlation coefficients (Stephanie, 2015). If the value of r is greater than zero, the relationship is positive; if it is less than zero, the relationship is more toward the negative. According to Siegle (2009), if the Sig. (2-tailed) value is less than or equal to 0.05, then there is a significant correlation between the variables; if not, there is no correlation.

Table 4: *Pearson Correlation Coefficient Test*

	Perceived Authentic Leadership	Employee Creativity	Job Autonomy	Innovative Work Behavior
Perceived Authentic Leadership	1			
Employee creativity	0.548	1		
Job autonomy	0.211	0.367	1	
Innovative Work Behavior	0.340	0.363	0.398	1

Pearson correlation analysis (Table 4) reveals a moderately favorable association between perceived authentic leadership and employee creativity (r= 0.548, p-value < 0.001). Additionally, there is a strong correlation between perceived authentic leadership and

innovative work behavior (r =.211 and.340) as well as job autonomy. There exists a positive and moderate association among employee creativity, job autonomy, and creative work behavior.

Confirmatory Factor Analysis (CFA)

To identify the factor construction CFA has also been performed. CFA is used to check the relationship among and within the constructs of the model.
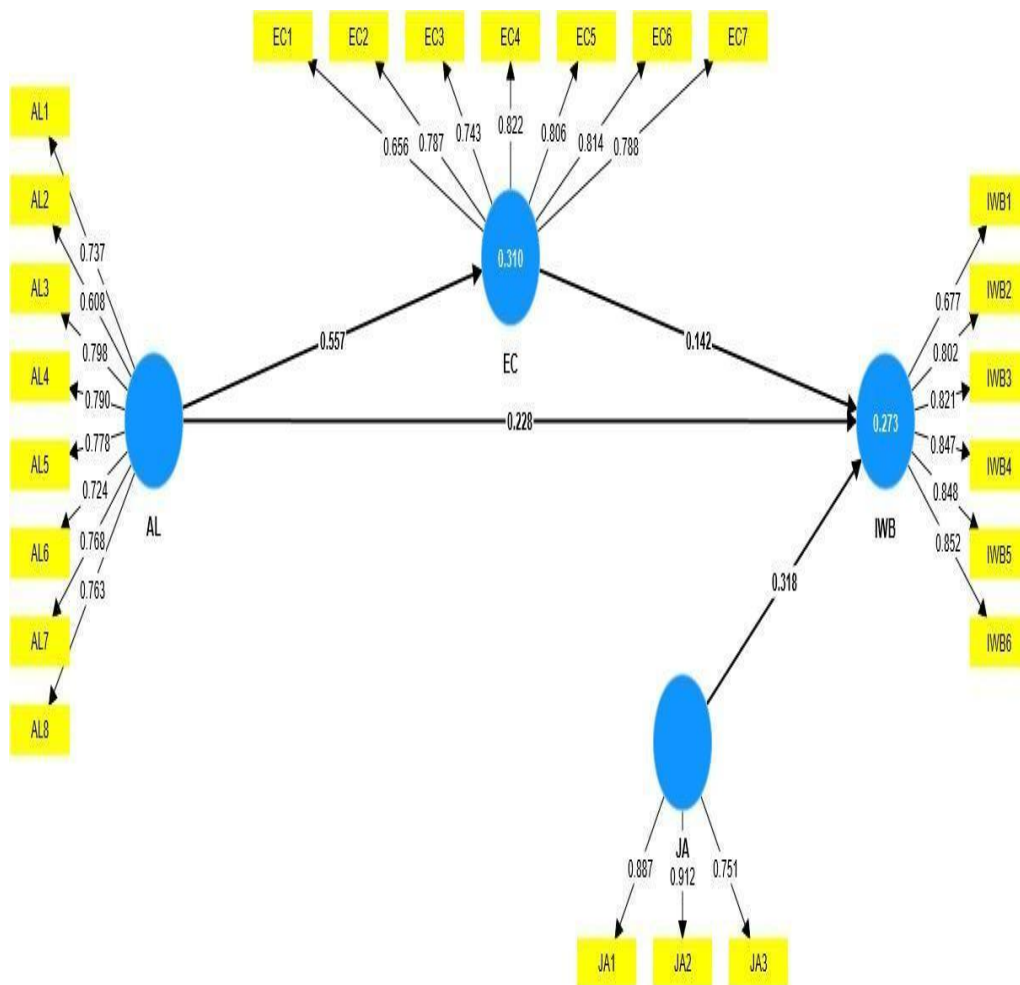
Measurement Model

Figure 2 PLS-SEM Diagram

The tests listed below were evaluated for the model's assessment.

Table 5: *Construct Reliability and Validity*

Items	Cronbach A	Composite Reliability (Rho_A)	Average Variance Extracted (AVE)
AL	0.887	0.894	0.559
EC	0.888	0.890	0.601
IWB	0.896	0.913	0.656
JA	0.818	0.886	0.728

When the reliability values are greater than the cut-off value of 0.7, the Cronbach's α and composite reliability values must be evaluated in order to determine internal consistency (Field, 2009; Hair et al., 2016). The results presented in Table 4.12 clearly show the relationship between all the variables and questions because every score shows a value greater than 0.7, which satisfies the necessary threshold.

Convergent validity provides evidence of the association between the indicators of the same variables (Hair et al., 2016). It is reached when the Average Variance Extracted (AVE) value inside the variables is equal to or greater than the threshold value of 0.5, which is established by (Hair et al. 2016) and (Fornell and Larcker, 1981). The results are shown in Table 5, where it is clear that every variable in the model satisfies the requirements because its AVE value is more than 0.5.

Discriminant Validity

To determine how distinct one construct is from other constructs, discriminant validity is employed. Discriminant validity must be greater than AVE for every measure. DV refers to the degree to which a specific latent construct varies from other latent constructs (Duarte &Raposo, 2010) and is measured using AVE as given by HTMT criteria, (1981). This was done by contrasting every paired construct's squared relationship with the AVEs for every construct.

According to Hair et al. (2016), discriminant validity assesses how well indications of one variable differ from those of the other.

Table 6: Discriminant Validity (HTMT criterion)

	AL	EC	IWB	JA
AL	(.559)			
EC	0.517	(.601)		
IWB	0.389	0.408	(.656)	
JA	0.255	0.432	0.455	(.728)

According to the values observed in Table 6, the value in parentheses is showing the AVE value of each variable. The results show that each variable AVE is greater than 0.50 which is minimum benchmark for acceptance. HTMT values in above table are <0.85 which is standard benchmark that shows that there is no discriminant validity issue in the data.

Model Structure

The route analysis has been used to examine the structural model. Every avenue connected to the research hypothesis has been investigated.

Table 7: *Results of Path Analysis*

Hypothesis	Path	Beta	T statistics (|O/STDEV|)	P values	Remarks
H1	*AL -> IWB*	*0.165*	*2.263*	*0.024*	*Accepted*
H2	*AL -> EC*	*0.557*	*11.308*	*0.000*	*Accepted*
H3	*EC -> IWB*	*0.178*	*2.333*	*0.020*	*Accepted*

The values in table 7 shows the results of the path analysis. All three hypotheses have shown positive and significant relationships that are accepted. According to the H1 (Perceived Authentic Leadership-> Innovative Work Behavior), innovative work behavior is favorably and significantly impacted by perceived authentic leadership (beta = 0.165, p-value = 0.024). According to the H2 (Perceived Authentic Leadership -> Employee Creativity),

employee creativity is positively and significantly impacted by perceived authentic leadership (beta = 0.557, p-value = 0.000).

Employee creativity positively and significantly influences innovative work behavior, as demonstrated by the H3 (employee creativity -> innovative work behavior) (beta = 0.178, p-value = 0.020).

Mediation Analysis

Table 8: *Mediation Analysis*

Hypothesis	Path	Beta Effect Type	T statistics (|O/STDEV|)	P values	Remarks
H4	AL -> EC -> IWB	Indirect 2.081 0.099		0.038	Accepted

The single hypothesis in the mediation analysis table above is a partial mediation that is approved since it shows a strong and positive relationship.

H4 (AL -> EC -> IWB) shows how employee creativity acts as a mediator and positively mediates the relationship between perceived authentic leadership and innovative work behavior (beta = 0.099, p-value = 0.038).

Furthermore, explaining the hypothesis H4, which posits an indirect relationship between perceived authentic leadership (AL), employee creativity (EC), and innovative work behavior (IWB), was accepted. The beta effect for this indirect path is 0.099, with a T statistic of 2.081 and a P value of 0.038, indicating statistical significance. This suggests that employee creativity partially mediates the relationship between perceived authentic leadership and innovative work behavior. While the direct effect of perceived authentic leadership on innovative work behavior is significant, the

mediation analysis reveals that the indirect effect through employee creativity also plays a crucial role.

Table 9: *Total Effect, Direct and Indirect Model of Mediation Analysis*

Total Effect of PAL on IWB				Direct Effect of PAL on IWB				Indirect Effect of PAL>EC>IWB	
Effect	SD	T	P	Effect	SD	t	P	Effect	Boot SE
0.264	0.05	4.992	.000	0.165	0.07	2.26	0.02	0.099	0.020

In addition, table 9 depicts the results of total effect, direct effect and indirect effect of mediation analysis. The indirect effect of 0.099 means that two individuals who differ by one unit in experiencing the Perceived Authentic Leadership are estimated to differ by 0.099 units in bringing Innovative work behavior as an outcome of the propensity for those individuals with relatively more experiencing the Perceived authentic leadership to attain more Employee Creativity because the sign of α is positive, which in results brings the more Innovative work behavior because the direction of β is positive. Table 9 also depicts the direct effect of Perceived authentic leadership as c' = 0.165. This direct effect reflects the estimated difference in Innovative work behavior between the two individuals who experience the same level of Employee Creativity but they differ by one unit in their experience of Perceived Authentic Leadership. This direct effect of 0.165 is positive in nature.

Moderation Analysis

Examining the moderating impact involved examining the direct correlations between the exogenous and moderator components as well as the relationship between the interaction component and the

intrinsic variable. Using the product indicator technique developed by Chin et al. (1996), moderating effects in the PLS model were examined. If the resulting path coefficient is significant, the moderating impact hypothesis is validated, regardless of the values of the path coefficient displayed in the direct connection (Baron & Kenny 1986).

Standardizing indicator values before multiplication is a technique proposed by (Smith and Sasaki, 1979) to reduce calculation mistakes by improving the relationship between the product indicators and each of their component parts. This method's objective is to measure moderating effects. After that, all possible products are generated by combining the two sets of standardized indicators for the moderator and predictor variables. These product indications represent the hidden interaction variable. Next, the latent variables are created using the PLS technique as an accurate linear blend of their signals in order to maximize the explained variance for both the indicators and hidden variables.

Table 10: *Moderation Analysis*

Hypothesis	Path	Beta	T-value	P-value	Remarks
H5	JA x EC -> IWB	0.248	4.831	0.000	Accepted

In 10, moderation analysis has been shown in which one hypothesis has shown a positive and significant relationship, so hypothesis 5 is accepted.

The association is strengthened by H5 (JA x EC -> IWB), which demonstrates that job autonomy has a significant and favorable effect on employee creativity and innovative work behavior (beta = 0.248, p-value = 0.000).

5. Discussions

This chapter looks at the data analysis's conclusions and outcomes in light of the study's research questions. Through a comprehensive discussion, conclusions and key recommendations are drawn for

practitioners. Additionally, potential areas for future research are explored, considering the limitations inherent in this study. This study investigates concepts derived from three crucial theoretical foundations of social cognitive theory.

Recent scholarly work has highlighted a noticeable gap in comprehensive literature addressing the various facets of innovative work behavior within the information technology sector, thereby exposing deficiencies and emphasizing the need for further exploration to achieve conceptual clarity and develop a theoretical framework (Usher & Ford, 2022). The current research on innovative work behavior is still in its infancy, which emphasizes how important it is to investigate the characteristics, causes, and effects of this type of behavior, particularly in the context of information technology (Usher, E., & Ford, C. J. 2022).

A notable gap in the current literature is highlighted by the fact that researchers cannot agree on the definitions of innovative work behavior because there has only been a limited amount of empirical research done to improve our understanding of this concept in the context of information technology (Lee, et al., 2021). Our main goal in this research endeavor is to "examine the impact of perceived authentic leadership on innovative work behavior within the information technology sector of Pakistan, with a focus on the development and delivery of IT services and products." We hope that this may help close this study gap. The operationalization of innovative work behavior, particularly in the context of IT services and product development, has been confirmed by empirical data, including a strong reliability and validity study (Choi & Kang, 2021). As such, these research findings contribute to the empirical understanding of the characteristics of innovative work behavior in the ever-changing information technology environment. Given our findings, we suggest a more precise definition of the recently

created term "innovative work behavior" in relation to Pakistan's IT industry: "Innovative work behavior pertains the acquisition of new capabilities, technology, or equipment, with a particular emphasis on the development and delivery of cutting-edge IT services and products (Purwanto, 2021).

The primary objective is to introduce novel IT products or services, addressing the perceived authentic leadership needs specific to the information technology sector in Pakistan, through online distribution channels. The information technology industry's evolving definition of innovative work behavior, as determined by our research, can be summed up as follows: "Innovative work behavior results in the acquisition of new capabilities, technology, or equipment." The goal is to offer innovative IT products or services, addressing perceived authentic leadership needs within the information technology sector of Pakistan, through enhanced distribution channels. It also encompasses the adoption of more advantageous revenue models and cost structures for IT organizations, capturing value for both customers and the organization" (Asbari et al., 2021)

The second objective of the research in this study was to assess the predictive role of perceived authentic leadership in encouragement of employee creativity within the context of the information technology (IT) industry. Our goal was to examine whether organizations in the IT sector adapt their innovative work behavior in response to internal driving forces, particularly focusing on innovation capabilities. Our empirical findings reveal a significant positive change in the value of innovative work behavior within information technology organizations. This change is attributed to the organization's capability to intelligently rework, co-design, and co-produce new ideas or technological options, along with the effective diffusion of these innovations across various

functions of the organization. Specifically, our research indicates that information technology organizations with higher perceived authentic leadership morals are more likely to bring about positive changes in employee creativity behaviors. This result is consistent with the social cognitive theory, which holds that firms in the information technology sector that can quickly adapt through innovation to the shifting market dynamics will succeed (Duarte et al., 2020). Additionally, the study by (Ribeiro, 2020) has conceptualized that strong perceived authentic leadership may lead to robust employee creativity, highlighting the need for further empirical testing in future research within the information technology industry. By addressing the recent call for empirical investigation of the possible influence of employee creativity on innovative work behavior within the information technology sector, this empirical result adds to the body of literature already in existence (Duarte et al., 2020).

Evaluating the effect of employee creativity on innovative work behavior in the Information Technology (IT) industry was the third research goal of the study. The empirical analysis underlines the essential role of organizational executives in leveraging the organization's capabilities to intelligently reshape, redesign, and reproduce new ideas or technological options (Ribeiro & Duarte, 2020). These capabilities, when diffused across various functions of the organization, contribute to higher technological success, apparent in terms of substantial value added to existing products or services, sustained competitive positioning, technological success, and a substance for future technological achievements (Oliveira, 2020). The success attained through recently introduced IT services also leads to a notable improvement in the organization's creative work culture as a whole. Empirically, the results indicate that is increase in one unit in employee's creativity corresponds to a -unit

increase in innovative work behavior within information technology organizations. This suggests that employees in an information technology company, differing by one unit in their approach to regulating employee creativity, are estimated to differ by units in bringing about a substantial positive change in terms of value in their innovative work behavior. These results align with previous research suggesting a complex relationship between employee creativity and innovative work behavior (Afsar, & Umrani, 2020). Moreover, it is conceptualized that exploring the association of these variables with performance indicators, such as employee creativity, is essential within the information technology sector (Lee et al., 2021). These observed findings contribute to the existing body of knowledge by addressing this identified need in the existing research literature (Afsar & Umrani, 2020). But even with these developments, the IT sector still faces assumptions and obstacles that prevent employees from being creative and innovative at work.

The fourth research objective of this study is primarily concerned with evaluating the ways in which employee creativity mediates the relationship, both directly and indirectly, between innovative work behavior and perceived authentic leadership in Pakistan's information technology sector.

It's essential to recognize that individuals within an organization, covering middle or functional management levels, serve as the fundamental unit for directing organizational processes. Particularly, certain individuals may resist innovation due to tendencies such as routine-seeking behavior, close-mindedness, resistance to new adjustments, or a fear of losing control (Lee et al., 2020). The empirical analysis conducted for the fourth research objective suggests that the ability of employees in an organization to creatively rework processes, devise new

strategies, generate technological products and services, and incorporate innovative ideas or technological solutions significantly influences innovative work behavior. This impact is particularly remarkable when overall employee creativity is predominant at higher levels among employees (Hughes et al., 2020). This implies that if a substantial number of executives or employees in an information technology firm in Pakistan exhibit characteristics like specific routine working behavior, resistance to new adjustments, or a fear of losing authority and control, the organization may struggle to achieve meaningful innovative changes in its work environment, regardless of its pursuit of enhanced innovative capabilities (Chaubey & Sahoo, 2019).

At the moment, the majority of research on the factors driving innovative work behavior is theoretical in nature, with only a small number of empirical studies offering hard data on these drivers. It's important because recent conceptual research has indicated that internal factors like perceived authentic leadership, employee creativity, and job autonomy are likely to influence employees' innovative work behavior. This suggests the need for additional empirical research (Lee et al., 2020).

This conceptualization identifies a research gap, leading to the establishment of research objective five: "to examine the significant moderating effect on the relationship of employee creativity and innovative work behavior." In this study, hypotheses 5 and 6 look into how job autonomy modifies the effects of perceived authentic leadership and employee creativity on how innovatively employees perform. Overall, the results point to a stronger relationship between job autonomy and innovative work behavior, even when employee creativity remains same. Particularly, job autonomy affects the favorable effects of perceived authentic leadership's indirect influence on creative work practices

among employees. Remarkably, while job autonomy is less than employee creativity (which is seen as a positive force), the combined influence of both forces is favorable for innovative work behavior, and vice versa (Pranowo & Supriadi, 2021). According to the hypothesis, an employee's ability to be creative and engage in new work practices depends on how much job autonomy they have. More specifically, it is anticipated that increased job autonomy will bolster the favorable correlation that exists between worker inventiveness and innovative work behavior (Siregar et al., 2021).

This hypothesis speculates that the impact of employee creativity on innovative work behavior depends on the level of job autonomy. Increased levels of job autonomy are expected to enhance the positive relationship between employee creativity and innovative work behavior, allowing employees to implement their creative ideas more effectively (Siregar et al., 2021). These hypotheses align with Social Cognitive Theory as they explore the driving forces (perceived authentic leadership, employee creativity) and the potential moderating force (job autonomy) in the context of innovative work behavior within the IT industry. The proposed study appears to contribute to filling the gap in empirical evidence, particularly within the information technology culture of Pakistan.

6. Conclusion

By looking into the factors that contribute to innovative work behavior, this study seeks to fill in some significant gaps in the recent research literature. The study explores the relationship between perceived authentic leadership and innovative work behavior by developing research objectives and questions that are specific to the gaps that have been discovered. Additionally, it conducts an empirical investigation into how job autonomy and employee creativity affect the direct correlation between creative work practices and perceived authentic leadership. Furthermore,

the research evaluates the overall indirect impact of perceived authentic leadership on creative work practices, accounting for the moderating effects of job autonomy and the mediating function of employee creativity. An important emphasis is on providing empirical support for the operationalization of creative work practices. In pursuit of these research objectives, the study has formulated guiding research questions, forming the foundation for six research hypotheses. The comprehensive literature review, coupled with the empirical findings, underscores the significance of addressing employee creativity and job autonomy as driving forces in daily organizational activities. Generous the extent of these two forces—employee creativity and job autonomy—is essential for organizations striving to achieve significant value effects in innovative work behavior, even though enhancing the organization's innovation capabilities can produce substantial impacts on perceived authentic leadership and innovative work behavior. Here, "analysis" pertains to gauging the cumulative impact of the sub-elements of these two forces. The findings of the study bear critical implications for middle and functional management levels of information technology companies in Pakistan. They serve as an initial guide for practitioners aiming to implant innovation in their employees' work behaviors. The provided insights can assist practitioners in assessing the extent of various sub- elements of employee creativity and job autonomy, enhancing their understanding of how these factors contribute to positive outcomes in innovative work behavior. The study concludes that innovative work behavior and perceived authentic leadership are significantly influenced by employee creativity, job autonomy and creative work behavior individually and jointly, as well as by the negative and positive interactions between these two factors. These elements may be thought of as essential contributors

to the qualifications of innovative work behavior.

Future studies should focus on the missing links between innovative work behavior and perceived authentic leadership, including (but not limited to) examining the involvement of various cognitive technology processes in management decisions. To enhance the theoretical framework, future research is recommended to utilize a larger sample from the diverse service sectors of Pakistan. Comparative studies among different IT companies could also be conducted to assess the extent of innovative work behavior achieved and its effects on competitive positioning in the industry. Furthermore, future research can extend the present theoretical framework by investigating the role of other organizational factors, such as organizational innovative culture, knowledge exploration and exploitation, human-AI collaboration and organizational technological cognition etc.

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