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MARKET FORCES

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

The Impact of Instrumental, Adversarial Network Ties, and Emotional Labor on Job Satisfaction

Madiha Shafique Dar
Planning and Development Department, Government of Baluchistan, Pakistan

Abstract

In the present technological era, social networks significantly affect job-related outcomes. Given its importance, we examined the effect of “instrumental ties, adversarial ties, and emotional labor on job satisfaction.” And the moderating role of communicative rationale. We collected a sample of 148 employees from a premier telecommunication company in Balochistan. We used Smart PLS for statistical analysis as we had a small sample size. The study found that “instrumental network closeness and emotional labor” promote job satisfaction. Whereas adversarial network closeness “insignificantly affects job satisfaction.” We also found an insignificant association between the moderating role of “communicative rationale on emotional labor and job satisfaction.” We believe healthy and positive relations provide physical comfort and emotional support. Further, the negative relations may distract employees and minimize their ability to focus on the task, but employees preoccupied with their jobs do not get distracted by such ties.

Keywords: *Job satisfaction, social network, instrumental network ties, adversarial network ties, closeness centrality.*

Introduction

Social network literature demonstrates the relationship between the network users and their collective responses has several job-related consequences (Levidow, Sansolo,

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& Schiavinatto, 2022). Social Network Theory assumes the attitudes and behaviors of social network members depend on their social interaction (Keller, Wong & Liou, 2020). Mason, Narcum, and Mason (2021) assert that the social ledger consists of positive and negative ties that provide social capital and liabilities. In other words, social networks may facilitate and hinder the behaviors and performances of employees and organizations. Similarly, in social network literature, the notions of structural balance also demonstrate the dynamics of positive and negative edges with graphical representation (Cisneros-Velarde, & Bullo, 2020). This perspective proposes that each positive tie links with a negative phenomenon that may have either a good or bad impact. Hence, it assumes that positivity and negativity coexist (Duan et al. 2019). The effects of these networks have been investigated on job satisfaction and other organizational-related outcomes (Hayati & Puri, 2020). Several studies have examined the effect of social network patterns in other domains, but a few have examined their impact in the domain of the telecommunication sector (Ibrahim & Aljarah, 2023; Saputra, Setyoko, & Kurniasih, 2022). Given the above gap, the study examines the impact of instrumental network closeness centrality, adversarial network closeness centrality, and “emotional labor” on job satisfaction. And the “moderating role” of communication rationale on “emotional labor job and satisfaction”.

Literature Review

Job Satisfaction

The literature suggests that job satisfaction is an extensively studied concept. The concept began in the 1930s (Luthans, 1998), and to date, numerous studies have examined its antecedents and consequences worldwide (Teng, Wu, & Tsai, 2022; Haar & Brougham, 2022). Researchers have examined its antecedents and consequences in many domains and disciplines (Zhang, Sun, & Zhang, 2022). Despite the extensive research, researchers still refine it according to the demands of different domains. Boccoli, Gastaldi, and Corso (2023) assert that satisfaction is dynamic and varies with time and domains. Despite many definitions of job satisfaction, researchers believe the definition by Locke (1976) is the most comprehensive. He argues job satisfaction is “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience.” Moorman (1993) and Badri et al. (2022) define job satisfaction as a combination of cognitive and affective contentment. Similarly, Brief (1998) proposed it to be an internal state. Weiss (2002) sees job satisfaction as an attitude, whereas Padmanabhan (2005) summarized it as an overall feeling that employees receive from different aspects of the job. Becerra (2023) believe that job satisfaction evolved from a single perspective to multiple perspectives.

Social Network Ties: Instrumental and Adversarial Network Ties

Social network researchers often distinguish between two broader types of social network ties: positive and negative (Clarke, Richter & Kilduff, 2022). Positive ties bound individuals together either formally or informally. These ties promote networks like “instrumental, trust, support, advice, collaboration, communication, and friendship” (Frangi et al., 2022). Genkin, Harrigan, Kanagavel, and Yap (2022) believe that social network activities help employees build strong social networking, resulting in positive attitudes towards jobs and organizations.

Within every organization, employees are part of social interactions. Such ties are associated with work, advice, help, and resources necessary to accomplish a task (Carnabuci, Nedkovski, & Guerci, 2023). The researchers assert that instrumental ties usually deal with the cognitive abilities of an employee (Ali, Khan, Wang, & Wang, 2022). Negative ties are “enduring, recurring set of negative judgments, feelings, and behavioral intentions toward another person” (Frangi et al., 2022). These ties relate to hindrance, avoidance, adversarial, and conflict.

Network Centrality

Most studies have examined the factors affecting network centrality and found varying results (Bringmann et al., 2019). Niedbalski and Ślęzak (2022) assert that network centrality is critical for analyzing social networks (Daly et al., 2019). A typical network centrality has three main measures: “degree of centrality, closeness, and betweenness” (Badar, Hite & Ashraf, 2015; Liu, Zhang, Zhang, & You, 2022). The degree of centrality relates to the number of direct ties a network user has with other network users. Closeness centrality specifies how close or near the network users can be to other network users. Betweenness is an intermediary between network users (Latora & Marchiori, 2007; Valeri & Baggio, 2022).

A network user’s “closeness centrality” relates to minimum distance or geodesic paths. Freeman (1979) defines closeness centrality as “the sum of graph theoretic distances from all other nodes.” At the same time, the distance from a node to another node refers to the “length and link,” which must be the shortest possible path. The study argues that informative and disliking behavior flows in the network. The employees or users occupying the shortest distances will receive the flow of information sooner than others. Information flowing in the network reaches all network users, but users with high levels of closeness receive novel information before others. This information can be valuable, and receivers can use it to accomplish the task. Similarly, if a disliking behavior flows in the network, the employees with high closeness scores will be affected earlier (Borgatti, 2005).

Hypothesis Development

In the following sections, we present theoretical arguments for articulated hypotheses.

Instrumental Network Closeness Centrality and Job Satisfaction

Employees embedded in an instrumental network may enhance their abilities and learning skills by being well-informed about the details (Yuan et al., 2022). The proximity to other employees also helps them keep abreast with the pressing work challenges and balance the workflow momentum (Rrmoku, Selimi, & Ahmedi, 2021). Thus accumulating quality information will reduce stress, ambiguity, and uncertainty (Cheng, Cao, Guo, Xia, 2022). This experience may boost employees' morale, confidence, and self-esteem and, most importantly, increase their satisfaction (Zaman et al., 2021). Thus we argue that acquiring quality information may enhance employees' job satisfaction.

H1: Instrumental network closeness centrality "positively affects job satisfaction."

Adversarial Network Closeness Centrality and Job Satisfaction

This paper argues that "adversarial network ties" adversely affect users' friendly and affective behavior. These antagonistic ties usually promote enmity and hate between employees (Usmanova et al., 2021). Hence, the employees may not benefit from the same social environment assumed to benefit others. Employees in negative ties face organizational rivalry, hindrance, conflicts, and stress (Yaghoubi & Fainekos, 2019). Unpleasant and aversive behaviors reduce employees' attitudes toward work. Such relations thwart the exchange of valuable information (Abubakar, 2020). Reducing the employees' social network activities promote pessimistic feelings and thoughts, leading to negative job satisfaction (Lim et al., 2022). The threats and anxiety ties can depress and frustrate the employee (Strokach et al., 2020). Hence, we argue that employees central to an adversarial network would experience dissatisfaction and distraction.

H2: Adversarial network closeness centrality "negatively affects job satisfaction."

Emotional Labor and Job Satisfaction

Extant literature documents inconclusive results between "emotional labor and job satisfaction" (Gulsen & Ozmen, 2020). Wen, Huang, and Hou. (2019) asserts controlling emotion leads to negative satisfaction. The authors also believe selling employees' emotions commercially is an important precursor to negative job satisfaction. While validating past studies, Lartey, Amponsah-Tawiah, and Osafo (2019) suggest that employees often resort to "surface-acting and deep acting" to control their emotions. These aspects negatively affect job satisfaction. Others assert that "surface acting and

deep acting may positively affect job satisfaction" (Amissah, Blankson-Stiles-Ocran, & Mensah, 2022). Extant literature also documents that surface acting stimulates negative job satisfaction, and expressing genuine emotions enhances job satisfaction (Nguyen & Stinglhamber, 2021). Wang, Lin, Chen, and Wu (2022) assert that employees often suppress their emotions to follow organizational rules and regulations, negatively affecting their job satisfaction. Khetjenkarn and Agmapisarn (2020) suggest that organizations can reduce the adverse effect of emotional labor by offering financial rewards and supportive culture rather than having a rigid structure.

H3: "Emotional labor" positively affects "job satisfaction."

Moderating Role of Communicative Rational Action

The rational communication phenomenon has stemmed from the Theory of Communicative Rationality (McCandless & Vogler, 2020). Researchers believe it is against capitalist mentality, but it aligns with "social firm understanding," an important aspect in today's competitive era for sustainability and growth. Wang, Ryan, and Yang (2019) believe rational communication will not soften the strategic goals of all institutions except nongovernmental organizations. Aagerup, Frank, and Hultqvist (2019) assert that businesses must promote employee-friendly policies and encourage employees to take rational communicative actions. Communicative rational action is vital for an organization and individuals as it helps firms to revise their policies and procedures and has a varying effect on "emotional labor and job satisfaction" (Çamlı et al., 2022; Claeys & Coombs, 2020). A study on rational communication action found that managers scoring high on the rational communication scale have a positive approach toward firms and employees (Xiao, 2020). Buhmann, Paßmann, and Fieseler (2020) suggest that emotion regulation reduces emotional labor's adverse effects. Similarly, when an individual takes "rational communicative actions," the effect of emotional labor decreases (Berti & Simpson, 2021).

H4: Communicative rational moderates "emotional labor and job satisfaction."

Conceptual Framework

After reviewing the relevant literature discussed in the above sections, we have developed a "conceptual framework" depicted in Figure 1.

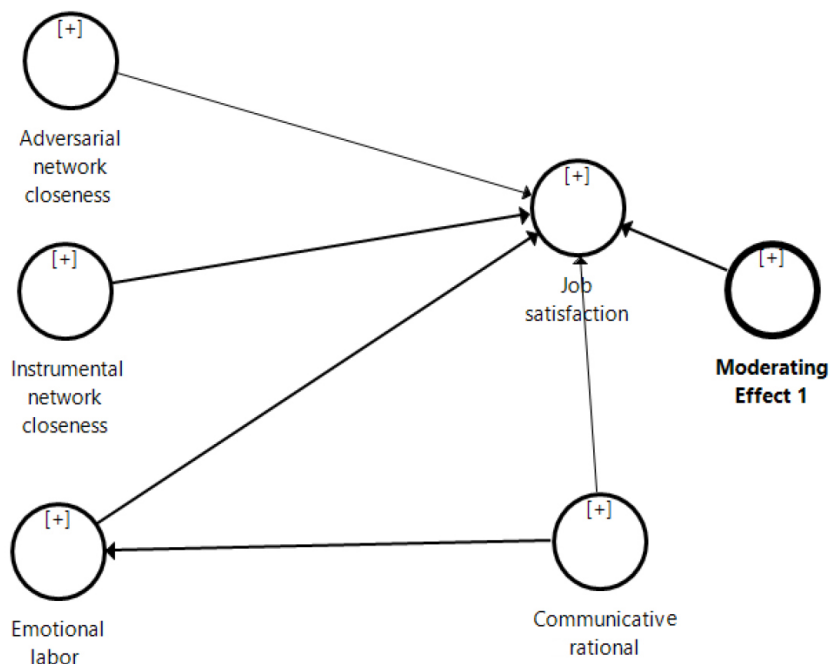


Figure 1: Conceptual Framework

Methodology

Population and Sampling

The study collected data from 148 employees working in the head office of a premier telecommunication company in the provincial capital of Balochistan, Quetta. The authors personally visited the company and distributed 160 questionnaires and received 148. We used non-random sampling since the target telecommunication company's sample frame was unavailable.

Pilot Tests

The study has adopted the questionnaire from the existing reputed journals. However, we pretested to find out issues related to the wording and comprehension of the questionnaire. For the pilot test, we recruited five students from a local university, and after explaining the purpose of the study, the volunteers filled out the questionnaires. They did not find any issues related to understanding the wording and content of the questionnaire. Subsequently, we assessed the reliability of the questionnaire based on 35 respondents selected from the target telecommunication company. We found that the "internal consistency values of the constructs in the pretest were within the

acceptable range.”

Scale and Measures

We adopted the constructs used in past studies. The questionnaire used in the study has five latent variables and a demographic part. The demographic part is “based on a nominal scale.” We measured the responses of the constructs based “5 -Point Likert Scale.” “Five suggesting a high agreement and one suggesting a low agreement.” Table 1 depicts a summary containing “constructs, sources, and items used in the study.”

Table 1: Scales and Measures

Construct	Sources	Items
Job Satisfaction	Rentsch, and Steel (1992)	20
Instrumental Network Closeness Centrality	Woehler et al. (2021)	5
Adversarial Network Closeness	Woehler et al. (2021)	5
Emotional Labor	Park, Cho, Lee, and Jeon. (2022)	10
Communicative Rational Action	Çamlı et al. (2021)	7

Results and Findings

Measurement Model

The measurement model presented in Figure 2 examines the “association between indicator variables and latent variables.” It also generates results related to the measurement model’s validity, reliability, predictive power, and fit indices. The study has presented results after the measurement model.

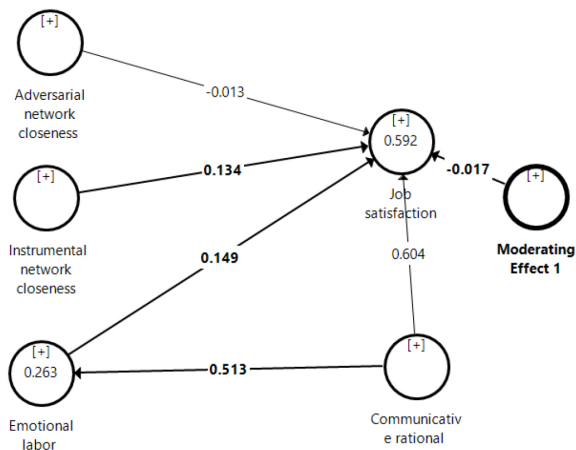


Figure 2: Measurement Model

Descriptive Analysis

We have generated values related to descriptive analysis and have presented them in Table 2.

Table 2: Summary of Descriptive Statistic

	Cronbach's Alpha	Mean	Std. Dev	Kurtosis	Skewness
Instrumental Network Closeness	0.848	3.686	1.344	1.415	1.980
Adversarial Network Closeness	0.835	4.173	1.472	1.198	1.204
Communicative Rational	0.701	3.578	1.481	1.904	1.226
Emotional Labor	0.844	3.709	1.615	1.448	1.636
Job Satisfaction	0.856	4.060	1.719	1.842	1.845

We found the highest Cronbach's value is for job satisfaction ($\alpha = 0.856$, $M = 4.060$, $SD = 1.719$), and the least is for communicative rational ($\alpha = 0.701$, $M = 3.578$, $SD = 1.481$), suggesting the "constructs have acceptable internal consistency" (Wong, 2013). We also found that constructs have univariate normality since all the "Skewness and Kurtosis values are lesser than ± 2.5 " (Khatun, 2021).

Convergent Validity

Convergent validity measures "the association between indicator variables and respective latent variables." We have summarized the results in Table 3.

Table 3: Convergent Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Instrumental Network Closeness	0.848	0.886	0.907	0.766
Adversarial Network Closeness	0.835	0.917	0.883	0.655
Communicative Rational	0.691	0.756	0.822	0.608
Emotional Labor	0.844	0.867	0.886	0.61
Job Satisfaction	0.856	0.86	0.912	0.777

Results depict that "all the composite reality values are at least 0.70, and AVE values are greater than 0.70," suggesting the constructs do not deviate from the requirements of convergent validity (Fornell & Larcker, 1981).

Discriminant Validity, Fornell (1981) Criteria

We examined "the discriminant validity based on Fornell's (1981)." We presented the results in Table 4.

Table 4: Discriminant Fornell & Larcher (1981) Criteria

Constructs	IND	ANC	CR	EL	JS
Instrumental Network Closeness	0.875				
Adversarial Network Closeness	0.438	0.809			
Communicative Rational	0.489	0.249	0.780		
Emotional Labor	0.524	0.545	0.513	0.781	
Job Satisfaction	0.500	0.274	0.745	0.522	0.881

We found all the “constructs are unique and distinct since AVE square root values are greater than Pearson Correlation values” (Fornell & Larcher, 1981)

Discriminant Validity HTMT Ratio.

The discriminant validity results based on the HTMT ratio presented in Table 5 suggest that the construct fulfills the requirements of discriminant validity since “all HTMT ratios are lesser than 0.90” (Risher & Hair, 2017).

Table 5: Discriminant Validly HTMT Ratio

	INC	ANC	CR	EL	JS
Instrumental Network Closeness	-				-
Adversarial Network Closeness	0.523				
Communicative Rational	0.603	0.292			
Emotional Labor	0.625	0.677	0.62		
Job Satisfaction	0.576	0.295	0.897	0.589	-

Predictive Power of the Measurement Model

Researchers suggest using “R and Q square values to assess the predictive power of the measurement model.” Table 6 shows that “R square values are graters than 0.20 and Q square values greater than 0.10,” suggesting the measurement model has adequate predictive power (Wong, 2013).

Table 6: Predictive Power of the Model

	R Square	R Square Adjusted	SSO	SSE	Q² (=1-SSE/SSO)
Emotional Labor	0.263	0.262	5990	5097.284	0.149
Job Satisfaction	0.592	0.59	3594	1958.188	0.455

Fit Indices of the Measurement Model

The “fit indices” in Table 7 show that “SRMR values are less than 0.08 and NFI values are greater than 0.80,” suggesting the measurement model has adequate fitness (Kong, 2013).

Table 6: Fit Indices

	Saturated Model	Estimated Model
SRMR	0.072	0.076
d_ULS	1.447	3.608
d_G	0.49	0.564
Chi-Square	3372.789	3722.988
NFI	0.833	0.805

Structural Model

Based on bootstrapping of 5000 sub-sample, we have “generated a structural model for hypotheses results.” Figure 3 depicts the structural model, and Table 7 shows the hypothesis results.

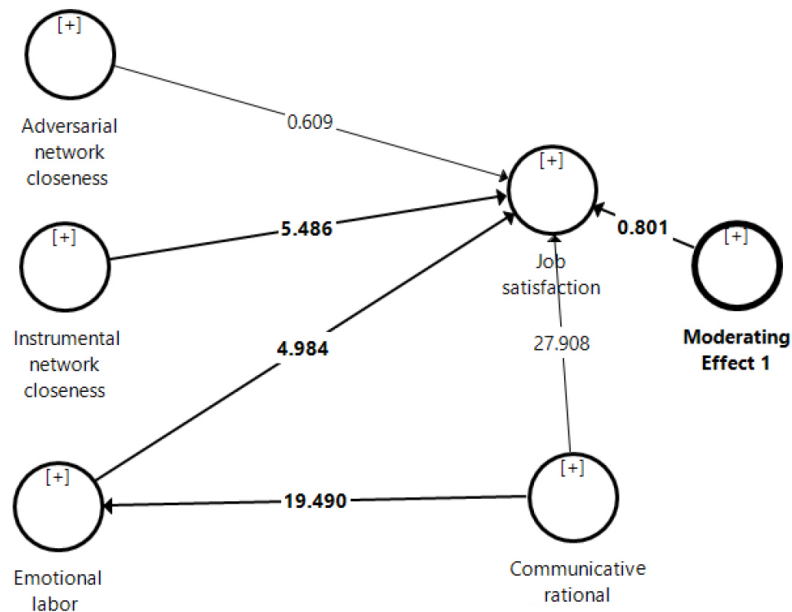


Figure 3: Structural Model

Table 7: Hypothesis Results

Hypothesis	B	T Stat.	P Values	Results
Instrumental Network Closeness -> Job Satisfaction (H1)	0.134	5.486	0	Accepted
Adversarial Network Closeness -> Job Satisfaction (H2)	-0.013	0.609	0.543	Rejected
Emotional Labor -> Job Satisfaction (H3)	0.149	4.984	0	Accepted
Moderating Effect 1 -> Job satisfaction(H4)	-0.017	0.801	0.424	Rejected

The results suggest: Instrumental network “closeness positively affects job satisfaction” ($\beta=0.134$, $t=5.468>0.05$). Adversarial network closeness “insignificantly affects job satisfaction” ($\beta= -0.013$ $t=0.609>0.05$). Emotional labor “positively affects job satisfaction” ($\beta= 0.149$ $t=4.984,<0.05$), and communicative rational insignificantly “moderates emotional labor and job satisfaction” ($\beta= -0.017$ $t=0.801> 0.05$).

Discussion and Conclusion

Discussion

We found that an “instrumental closeness network positively affects job satisfaction.” Literature suggests that the proximity to other employees also helps them keep abreast with the pressing work challenges and balance the workflow momentum (Rrmoku, Selimi, & Ahmedi, 2021). Thus accumulating quality information will reduce stress, ambiguity, and uncertainty (Cheng, Cao, Guo, Xia, 2022). This experience may boost employees’ morale, confidence, and self-esteem and, most importantly, increase their satisfaction (Zaman et al., 2021).

The results show that adversarial networks “insignificantly affect job satisfaction.” Thus, unpleasant and aversive behaviors reduce employees’ attitudes toward work. Such relations thwart the exchange of valuable information and knowledge (Abubakar, 2020). Thus, reducing the employees’ social network activities may promote pessimistic feelings and thoughts, leading to negative job satisfaction (Lim et al., 2022).

The study asserts that “emotional labor positively affects job satisfaction.” Extant literature also documents that “surface acting stimulates negative job satisfaction,” and expressing genuine emotions enhances job satisfaction (Nguyen & Stinglhamber, 2021). Wang, Lin, Chen, and Wu (2022) assert that employees often suppress their emotions to follow organizational rules and regulations, reducing job satisfaction. Khetjenkarn and Agmapisarn (2020) suggest that organizations can reduce the adverse effect of emotional labor by offering financial rewards and supportive culture rather than having a rigid structure.

We also found “communicative rationale insignificantly moderates emotional labor and job satisfaction.” Extant literature documents that “communicative rational action has a varying effect on emotional labor and job satisfaction” (Claeys & Coombs, 2020). Buhmann, Paßmann, and Fieseler (2020) suggest that emotion regulation reduces emotional labor’s adverse effects. Similarly, when an individual takes communicative rational action, the effect of emotional labor decreases (Berti & Simpson, 2021). A study on rational communication action found that managers scoring high on the rational

communication scale have a positive approach toward firms and employees (Xiao, 2020).

Conclusion and Implications

Based on a data set of 148 collected from the local telecommunication industry, the study found that “instrumental network closeness and emotional labor promote job satisfaction.” Whereas “adversarial network closeness insignificantly affects job satisfaction.” We also found an insignificant association between the “moderating role of communicative rationale on emotional labor and job satisfaction.”

The aspects of social capital and social network are broadly expanding. Yet the phenomenon is rarely addressed in Pakistani literature and context. This paper focuses on the Social Network Theory. According to Cross et al. (2013), social network analysis is an emerging field that needs to develop in practice and research. Labianca and Brass (2006) and Cross et al. (2013), and Labianca (2014) believe in the value of social network ties. They recommend that HR policies focus on improving an organization’s social network ties. This paper argues that social network ties that prevail in the organization influence employees. The interactions occur occasionally, but usually when information is necessary for the work.

Information and resources, and network interactions are important for an organization. To get information, employees usually contact, physically and through the network, the individuals they like and feel comfortable with (Keller, Wong & Liou, 2020). Usually, the interactions are positive and friendly, but there are also possibilities that negative interactions may prevail (Witteck, Kroneberg, & Lämmermann, 2020). The employees are usually aware of their relationships, and it is paramount that they must be satisfied with each other and other aspects of the working environment and organizational settings (Zagenczky & Murrell, 2009). Thus, the evidence suggests that isolating positive and negative ties is necessary. This distinction enables employees to make better decisions, leading to positive attitudes towards work.

The result of the study showed that instrumental relations are important for accumulating resources and information. Such positive relations help in coping with various work-related demands and maximizing satisfaction. Employees gain this satisfaction by acquiring resources and accomplishing tasks (Hayati & Puri, 2020). Hence, healthy and positive relations are a source of physical comfort and emotional support. Further, the negative relations may distract employees and minimize their ability to focus on the task. At the same time, the literature documents that employees preoccupied with their jobs do not get distracted by social ties. (Cross et al., 2013).

Limitations and Future Research

The influence of negative feelings may vary and differ within different domains of the relational network. Such ties might emerge frequently and affect employees differently. Possibly, it may divulge different consequences with different relational trajectories and lifespans (Erdogan, Karaminogullari, Bauer & Ellis, 2020). Thus we recommend a comprehensive study to discover negative network mechanisms. This study may lack generalizability as we collected the data from a telecommunication organization in Quetta. Future studies may examine the discussed phenomenon in other cities and other domains.

The study also recommends that future research may attempt to find a link between organizational attitudes and other social networks. It also recommends considering the network's mediating and moderating effects. Employees with greater tenure would have a more central network position and job satisfaction due to their increased tenure in the organization (Zhu, 2012). Similarly, according to research, ethnic identities contribute to unbalancing employees' beliefs, values, social relations, and satisfaction levels (Gold, Webb & Smith, 198). Thus, researchers may include these variables to understand the phenomenon better.

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Title: Perceived Organizational Support as an Antecedent of Knowledge Sharing Behaviors: Achieving Sustainability of Change Management Efforts

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Conflict of Interest

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Perceived Organizational Support as an Antecedent of Knowledge Sharing Behaviors: Achieving Sustainability of Change Management Efforts

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Abstract

Knowledge is the only way organizations gain sustainable competitive advantage in such a hyper-competitive era. Given its importance, the study examines the antecedents to tacit and explicit knowledge and the mediating role of psychological ownership. We have collected a sample of 157 using online Google forms and physically visiting the banks in certain cases. The study used Smart PLS for statistical analysis. Structural equation modeling was performed on Smart PLS for data analysis as the constructs are reflective. The study found that perceived organizational-support positively influences both dimensions of knowledge-sharing behavior – tacit and explicit knowledge. Psychological ownership positively “mediates perceived organizational support and explicit knowledge sharing.” However, we did not find support for the mediating role of psychological ownership between perceived organizational-support and tacit knowledge sharing. The study recommends the HR department must create awareness of the support it provides to employees. HR professionals must build an all-inclusive workplace culture that embodies organizational support. Furthermore, customized incentives such as extrinsic and intrinsic benefits can encourage employees to share knowledge.

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Keywords: *Tacit knowledge, explicit knowledge, perceived organizational support, psychological ownership.*

Introduction

In the prevailing era of the knowledge-driven economy, organizations use knowledge sharing for talent management strategies since it is important for firms' growth and sustainability (Kravariti et al., 2022). Market leaders can only continue with their superiority by acquiring talents with exceptional knowledge and skills and promoting a culture of knowledge sharing (Edeh et al., 2022). Individuals can acquire knowledge from various secondary sources and by interacting with knowledgeable persons (Al-Alawi, Al-Marzooqi, Mohammed, 2019). Yang, Van-Rijn, and Sanders (2020) assert that knowledge-sharing promotes cost efficiency and innovation in new product development and strengthens team performance. Kravariti et al. (2022) assert that employees are reluctant to share knowledge because they want to maintain their competitive edge over other employees. Therefore, organizations must build a culture in the workplace that encourages and fosters knowledge-sharing behavior. In this regard, support from management is imperative (Friday & Sunday, 2019).

Studies have shown that perceived organizational support directly influences psychological ownership and indirectly affects sharing behavior (Pittino, Martinez, Chirico, & Galvan, 2018). Extant literature asserts that employees develop a sense of belonging to firms that look after their well-being and make them feel valuable (Dyne & Pierce, 2004). This feeling generates emotional attachment and possessiveness toward the organization, which increases organizational commitment, citizenship behavior, and performance (Al-Alawi, Al-Marzooqi, Mohammed, 2019).

Social Exchange Theory asserts when employees feel their organization values them, they reciprocate by knowledge sharing and creating activities. Nevertheless, the type of knowledge that is shared makes a significant difference in the growth and sustainability of a business entity (Khan, Usman, Saeed, & Nisar, 2022). The importance of knowledge-sharing behavior is important in knowledge-intensive sectors such as banks. Few studies have examined tacit and explicit knowledge-sharing behavior as distinct constructs (Nguyen & Malik, 2022). Given this gap, the present study contributes to the body of knowledge by examining the relationship of perceived organizational-support with both types of knowledge sharing (i.e, tacit and explicit).

Thus this study examines the impact of perceived organizational-support on tacit and explicit knowledge-sharing behaviors. It also examines mediating roles of psychological ownership between (i) perceived organizational-support and tacit knowledge sharing and (ii) perceived organizational-support and explicit knowledge sharing.

Literature Review and Hypotheses Building

Explicit and Tacit Knowledge Sharing

Managing knowledge has become imperative for organizations. Knowledge embodies the experiences, ideas, and expertise necessary for employees to perform organizational duties (Pereira & Mohiya, 2021). This knowledge increases exponentially when employees mutually share knowledge with other employees. Such knowledge-sharing activities are necessary for the growth and sustainability of firms (Rumanti, Wiratmadja, Sunaryo, Ajidarma, & Samadhi, 2019). Rumanti et al. (2019) believe that firms now encourage and reward employees who share their knowledge with others (Rumanti et al., 2019). Pereira and Mohiya (2021) assert that organizations need to share knowledge effectively for uniqueness and competitive advantage (Rialti, Marzi, Caputo, & Mayah, 2020).

Technology facilitates and promotes knowledge sharing. Lopez-Cabarco et al. (2020) and others have classified knowledge into two basic forms; explicit and tacit. Explicit refers to knowledge employees can easily decode, communicate in words, and share within the organization. Such knowledge is tangible, including policies, procedures, and manuals (Olaisen & Revang, 2018). However, tacit knowledge is intangible and difficult to capture, archive, and share since it relates to an individual's personal and unique experiences, exposures, ideas, and expertise (Olaisen & Revang, 2018). Tacit knowledge sharing is contingent on social relationships in the workplace (Lopez-Cabarcos, Srinivasan, & Vazquez-Rodriguez, 2020).

Perceived Organizational-Support and Tacit Knowledge-Sharing

In the current knowledge-based economy, intellectual capital has become the source of organizational sustainability. Organizations can achieve a "competitive advantage by developing innovative products and business processes" that significantly depend on knowledge-based culture (Olaisen & Revang, 2018; Lopez-Cabarcos, Srinivasan, & Vazquez-Rodriguez, 2020).

Unlike explicit knowledge, tacit knowledge is in individuals' minds and is difficult to retrieve without their willingness. Individuals acquire tacit knowledge based on different experiences, beliefs, insights, and know-how (Park & Gabbard, 2018). Therefore, individuals may feel reluctant to share if they are not intrinsically motivated (Terhorst, Lusher, Bolton, Elsum, & Wang, 2018). Ganguly, Talukdar, and Chatterjee (2019), based on a study on the Indian industry, documented that tacit knowledge sharing depends on knowledge reciprocation. This reciprocity-sharing also depends on perceived social benefits (Tsai & Kang, 2019). Thus at the organizational level, individuals share tacit

knowledge if they feel their needs are being taken care of at their workplace. Based on the Social Exchange Theory and other arguments above, we hypothesized that:

H1: Perceived organizational-support positively affects tacit knowledge-sharing behavior.

Organizational-Support and Explicit Knowledge

Knowledge-sharing behavior within an organization materializes with an efficient knowledge management mechanism (Anand, Muskat, Creed, Zutshi, & Csepregi, 2021). Explicit knowledge, as iterated in various scholarly articles and publications, is codified and documented knowledge that firms share with employees through policies, reports, or procedures (Wang, Sharma, & Cao, 2016). Sharing explicit knowledge increases job efficiency and effectiveness, eventually enhancing an organization's innovativeness (Le, Lei, Le, Gong, & Ha, 2020).

Extant literature documents that organizational policies, culture, and knowledge-sharing platforms encourage overall knowledge-sharing culture (Le, Lei, Le, Gong & Ha, 2020). However, sharing this knowledge depends on organizational policies (Al-Alawi, Al-Marzooqi, Mohammed (2019). At an organizational level, workplace culture and high-involvement HRM practices are precursors of explicit knowledge sharing (Cao, Le, & Nguyen, 2021; Le, Lei, Le, Gong & Ha, 2020). At a personal level, extrinsic benefits motivate an individual to mutually share information using different platforms established at the workplace (Park & Gabbard, 2018). Based on empirical evidence, al-Alawi, Al-Marzooqi, Mohammed, and (2019) document that knowledge sharing has several benefits, including cost-effectiveness and growth. Cai, Song, Xiao, and Shi (2020) assert that organizations must spend resources on knowledge management platforms as it discourages knowledge-hiding behavior and facilitates explicit knowledge-sharing for a smooth workflow.

Social Exchange Theory postulates that individuals "share knowledge" when they benefit from awards, recognition, reputation, and salary increment. However, little research has examined an individual's perception of knowledge sharing. Yang, van-Rijn, and Sanders (2020) assert that individuals perceive the construct of "perceived organizational support" differently. Therefore, the association between organizational support may vary from one individual to another (Zhang & Liu, 2021). Based on the above, we argue that:

H2: Perceived organizational-support positively affects explicit knowledge-sharing behavior.

Mediating Role of Psychological Ownership

Employees' psychological ownership at the workplace depends on their strong association and belongingness to their respective organizations (Morewedge, Monga, Palmatier, Shu, & Small, 2021). It is an asset that positively affects job performance, organizational citizenship behaviors, and innovation (Zhang et al., 2021). Psychological ownership develops when employees emotionally, mentally, and physically relate to their organizations. It is only possible when organizations support and own their employees. Thus it eventually enhances psychological ownership (Zhang et al. 2021).

Psychological ownership instills a strong sense of belongingness in an organization. It inculcates a feeling of reciprocity, enabling employees to contribute to the organization by sharing learned behaviors and knowledge with other employees (Morewedge, Monga, Palmatier, Shu, & Small, 2021). Hameed et al. (2019) concluded that psychological ownership positively influences knowledge-sharing behavior. Han, Chiang, and Chang (2010) also validated the association between psychological and knowledge-sharing behavior. We argue that "psychological ownership promotes a sense of responsibility" towards the organization. Literature also argues knowledge sharing enhances employees' sense of contribution to the organization (Morewedge, Monga, Palmatier, Shu, & Small, 2021).

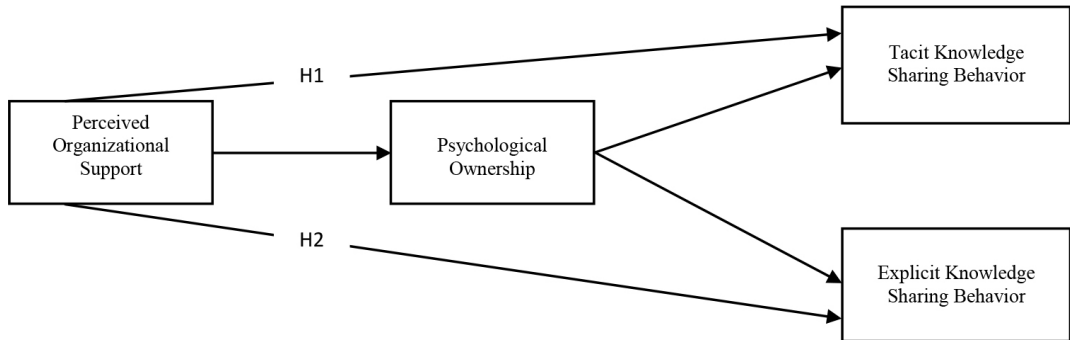
Social Exchange Theory postulates that "employees feel obligated to return the favor" to the organization that cares for their needs by providing extrinsic and intrinsic rewards. We argue that employees "develop a sense of belonging when they perceive that the organization supports their emotional and physical demands" (Zhang et al., 2021). Additionally, perceived organizational support is an antecedent of psychological ownership (Yildiz & Yildiz, 2015). Literature documents that psychological ownership, directly and indirectly, affects perceived organizational and knowledge-sharing behavior. Therefore we argue it mediates "(i) tacit explicit knowledge and (ii) explicit knowledge-sharing behavior."

H3: Psychological ownership mediates "perceived organizational-support and tacit knowledge-sharing behavior."

H4: Psychological ownership mediates "perceived organizational-support and explicit knowledge-sharing behavior."

Conceptual Framework

Based on the above theoretical arguments, we have developed a conceptual framework depicted in Figure 1.



Note:

H3: Mediating effect of psychological ownership on tacit knowledge sharing

H4: Mediating effect on psychological ownership on explicit knowledge sharing

Figure -1: Conceptual model

Methodology

Sampling and Procedures

This study aims to empirically investigate the relationship between the constructs of chosen variables. Hence, we adopted the positivist approach since we have examined the causal relationships (McCloskey & Silvestri, 2021). The study's dependent variables are tacit and explicit knowledge-sharing behaviors, whereas the independent variable is 'perceived organizational-support. Moreover, the study used psychological ownership as a mediating variable."

We collected the data from employees at the managerial level in Pakistan's banking sector, as it is one of the most knowledge-intensive sectors. The study collected data only from employees with more than one year of experience with the current organization. We used purposive sampling, a non-probability sampling technique. Since the sample frame for the target population was unavailable, we calculated the minimum required sample size of 85 using G power software. However, the study intercepted 210 employees for stable beta coefficients, of which we received 157 responses. In certain cases, we gathered data using online Google forms and physically visiting the banks. The study used Smart PLS as the sample size was small (Hair, Risher, Sarstedt, & Ringle, 2019).

Measures and Scales

We assessed the responses using a 5-point Likert scale, where one suggests strong disagreement and five indicates strongly agree. All the constructs were measured using the following scales.

Perceived Organizational-Support

We measured this scale using the scale of Hutchison and Sowa (1986). The original scale had 36 items. However, Yang, van Rijn, and Sander (2020) validated and used a shorter version of five items of the above scale.

Explicit Knowledge-Sharing

We measured explicit knowledge-sharing behavior using the instrument used and validated by Wang and Wang (2012). The scale consisted of six items. We modified it to align with the study's objectives.

Tacit Knowledge-Sharing

The study measured tacit knowledge sharing using seven items of the scale developed and validated by Lin (2007).

Psychological Ownership

The study measured psychological ownership using the scale developed and validated by Dyne and Pierce (2004). The scale consisted of seven items.

Furthermore, the demographic data collected from the respondents included gender, age, tenure at the current organization, and their management-level positions.

Data Analysis

The study model consisted of one independent variable (perceived organizational support), two dependent variables (tacit and explicit knowledge-sharing behavior), and one mediator (psychological ownership).

Common Method Bias

Common method bias may artificially inflate the results. Thus we assessed VIF values to check the presence of a common method bias using VIF values (Tehseen et al., 2017).

Structural Equation Modelling (SEM)

SEM was used to investigate causal relationships among the latent constructs. Researchers recommend this technique to examine the predictive power of latent constructs (Hair, Risher, Sarstedt, & Ringle, 2019). This technique conducts multivariate analysis and runs multiple regression equations simultaneously. SEM has two steps:

First, it generates the measurement model. In the second step, it generates the structural model.

Measurement Model

Initially, the study generated a measurement model to assess reliability, validity, factor loadings, and AVE. Discriminant validity shows the uniqueness of the constructs. For discriminant validity, we have used the HTMT ratio. Composite reliability assesses the internal consistency of the constructs, and their values must be greater than 0.70. Outer loadings suggest the contribution of each indicator variable to the respective constructs. Researchers suggest dropping the items with a factor loading lesser than 0.70. AVE explains the variance of indicator values towards the latent variables. And R square values suggest the predictive power of the model.

Structural Model

The structural model assesses the relationships between latent variables. It also depicts the significance of the relationships based on t and p values. However, measurement model measures the relationship between observed and latent variables.

Results and Findings

Respondents Profile

The majority of the respondents were males. Furthermore, most of the respondents belonged to the middle management level with more than 05 years of experience at the current organization. Respondents’ profile is depicted in Table 1 below.

Table 1: Respondents’ Profile

Variables	Categories	Percentage
Genders	Male	64%
	Female	36%
Age	23-27 Years	25%
	28 - 32 years	52%
	33 - 37 years	11%
	38 - 42 years	12%
Tenure at Current Organization	More than 01 but less than 03 years	34
	03 to less than 05 years	31
	More than 05 years	35
Management Level	Top management	5
	Middle management	73
	Lower management	22

Common Method Bias

We have assessed the common method bias based on the VIF values. The results presented in Table 2 depict all the VIF values are lesser than 3.3 suggesting the data set has no issues related to multi-collinearity and common method bias (Tehseen et al., 2017).

Table 2: VIF Values

Construct	VIF
Tacit Knowledge Sharing	1.857
Explicit Knowledge Sharing	1.297
Psychological Ownership	1.288
Perceived Organizational Support	1.802

Outer Loadings, Composite Reliability, and Average Variance Extracted

Table 3 depicts the outer loadings of items of each construct, reliability values, and AVE values. Outer loading suggests the contribution of each item towards the construct. Researchers suggest dropping the items with low threshold levels (i.e., <0.7) (Hair, Risher, Sarstedt, & Ringle, 2019). Thus we have removed the items whose threshold levels were less than 0.5.

Furthermore, Table 3 also indicates the composite reliability related to the constructs' internal consistency. The threshold for composite reliability is 0.7, which is met well by all the constructs used in this study (Hair et al., 2019).

Table 3: Outer Loadings, Composite Reliability, and Average Variance Extracted

Constructs	Item Code	Indicator Loadings	Composite Reliability	Average Variance Extracted
Tacit Knowledge	TK1	0.732	0.844	0.578
	TK2	0.878		
	TK3	0.796		
	TK4	Removed		
	TK5	Removed		
	TK6	0.723		
	TK7	0.734		
Explicit Knowledge	EK1	0.863	0.816	0.598
	EK2	0.779		
	EK3	REMOVED		
	EK4	0.768		

	EK5	REMOVED		
	EK6	0.787		
Per. Organizational Support	POS1	0.744	0.837	0.512
	POS2	0.728		
	POS3	0.852		
	POS4	0.786		
	POS5	0.725		
Psychological Ownership	PO1	0.741	0.903	0.611
	PO2	0.85		
	PO3	0.732		
	PO4	0.831		
	PO5	0.869		
	PO6	0.742		
	PO7	REMOVED		

The study used 25 indicator variables. We dropped five indicator variables as “their values were lesser than 0.70.” The results also show that all the “composite reliability values are greater than 0.70, suggesting adequate internal consistency of the constructs.” All the “AVE values are greater than 0.50, suggesting acceptable convergent validity” of the constructs used in the study (Lee, 2019).

Discriminant Validity

The study used the HTMT ratio to assess the discriminant validity. Table 4 shows that HTMT ratio values are lesser than 0.90 suggesting the constructs are unique and distinct (Hair, Risher, Sarstedt, & Ringle, 2019).

Table 4: Discriminant Validity

Constructs	EK	PO	POS	TK
Explicit Knowledge	-			
Psychological Ownership	0.414			
Perceived Organizational Support	0.809	0.746		
Tacit Knowledge	0.829	0.355	0.569	-

Variance in Endogenous Variable

We generated R square values to assess the variance in the dependent variables caused by the independent variable. The results in Table 5 show that the variance caused by both independent variables is moderate. R square values less than 0.25 suggest low variance. R square values between 0.25 and 0.50 suggest moderate variance. R square values greater than 0.50 suggest high variance.

Table 5: R Square Values

Construct	R square	Result
Tacit Knowledge-Sharing Behavior	0.320	Moderate
Explicit Knowledge Sharing Behavior	0.390	Moderate

Path Analysis

After successfully assessing the measurement model, we moved on to the structural model and conducted path analysis to check the hypotheses. This study articulated four hypotheses, and Table 5 presents the summarized results.

Table 5: Hypothesis Results

Hypothesis	β Values	T Values	P Values	Results
Direct Hypothesis				
Per. Org. support -> Tacit Knowledge Sharing (H1)	0.541	2.910	0.002	Supported
Per. Org. support -> Explicit Knowledge Sharing (H2)	0.478	2.296	0.011	Supported
Indirect Hypothesis				
Per. Org. Sup. -> Psy. Own. > Tact. Knowledge (H3)	0.183	1.217	0.112	Not Supported
Per. Org. Sup.->Psy. Own, > Explicit. Knowledge (H4)	0.210	3.359	0.000	Supported

Our results support Hypothesis 1 ($\beta=0.541$, $t=2.910<0.05$), Hypothesis 2 ($\beta=0.478$, $t=2.296<0.05$), and Hypothesis 4 ($\beta=0.210$, $t=3.359<0.05$). But our results do not support Hypothesis 3 ($\beta=0.183$, $t=1.217>0.05$).

Discussion and Conclusion

Discussion

Extant literature asserts that knowledge management is necessary for sustainable competitive advantage. Organizations innovate and nurture entrepreneurial mindsets by applying knowledge management technology and systems (Vaio, Palladino, Pezzi, & Kalisz, 2021). Knowledge management and knowledge creation are only possible when the members of organizations share knowledge with others (Le, Lei, Le, Gong & Ha, 2020). We examined the factors that “motivate employees toward knowledge-sharing behaviors.” As iterated earlier, knowledge has two important facets: tacit and explicit. Prior studies have examined knowledge-sharing behavior as a unidimensional construct. However, we have separately examined perceived organizational support’s effect on tacit and explicit knowledge-sharing.

We found that perceived organizational support positively affects tacit and explicit knowledge-sharing behaviors. The findings align with the works of Zhang and Liu (2021), who found that perceived organizational-support positively affects knowledge-sharing behavior. Our findings also align with the Social Exchange Theory that postulates when individuals feel that an organization takes care of their needs, they reciprocate the gesture by sharing their knowledge with the rest of their colleagues and peers. Moreover, the results are consistent with the findings of Choi, Goo, and Choi (2022), who found that organizational support leads to a positive attitude and voluntary knowledge-sharing behaviors.

We also examined the “mediating effect of psychological ownership between perceived organizational-support and tacit knowledge-sharing behavior,” which our results do not support. This phenomenon implies that psychological ownership has a non-significant effect on individuals’ choice to share knowledge embedded in their minds (Obrenovic et al., 2020). Perhaps this non-significant relationship exists due to individuals’ possessiveness towards organizational knowledge and reluctance to give up their competitive advantage.

However, we found “psychological ownership mediates perceived organizational-support and explicit knowledge.” These findings align with the Social Exchange Theory that postulates “employees develop a sense of ownership of the organizations and share their knowledge” with others when they feel organizations are concerned about their needs and have supportive behaviors toward them (Hameed et al., 2019).

Conclusion

To the best of our knowledge, this study is the first that examined tacit and explicit knowledge-sharing behavior, taking both as distinct constructs. Furthermore, the study “examined the mediating roles of psychological ownership between perceived organizational-support and both constructs of knowledge-sharing behavior.” The results support the direct relationships between “perceived organizational support and explicit and tacit knowledge-sharing behavior.” These results conclude that “employees would share knowledge in the presence of perceived organizational support.” Furthermore, “psychological ownership mediates the relationship between perceived organizational support and explicit knowledge. However, it did not support the mediating effect of psychological ownership between perceived organizational-support and tacit knowledge.

Practical Implications

The competitive advantage in this hypercompetitive-driven global economy

depends on the sound knowledge of an organization's employees. Thus, organizations must archive and manage knowledge efficiently to meet future needs and create new knowledge. Social Exchange Theory also postulates that employees would reciprocate if organizations cared for their physical and emotional needs and well-being. The HR department must create awareness of the support it provides to employees. HR professionals must build an all-inclusive workplace culture that embodies organizational support. Also, customized incentives such as extrinsic and intrinsic benefits can encourage employees to share knowledge. In addition, psychological ownership promotes sharing of explicit and tacit knowledge. Therefore organizations must develop a culture that encourages and rewards for knowledge sharing.

Limitations and Future Research

We collected quantitative data. This research uses cross-sectional data instead of longitudinal data collected from Karachi, which might limit its generalisability to other geographical regions. We suggest others collect the data from other cities based on longitudinal design. However, to enrich the study, we recommend others collect qualitative data. Cultural aspects and demographic factors affect knowledge-sharing behavior, which was beyond the scope of the study. Future studies may incorporate them as moderators.

Annexure-1

Constructs and Items Used in the Questionnaire

Explicit Knowledge

EK1. People in my organization frequently share existing reports and official documents with others.

EK2. People in my organization frequently share reports and official documents that they prepare themselves with members of my organization.

EK3. People in my organization frequently collect reports and official documents from others at work.

EK4. People in my organization are frequently encouraged by knowledge-sharing mechanisms.

EK5. My organization frequently offers a variety of training and development programs.

EK6. People in my organization are facilitated by IT systems for knowledge sharing.

Tacit Knowledge

TK1. People in my organization frequently share knowledge based on their experience.

TK2. People in my organization frequently collect knowledge from others based on their experience.

TK3. People in my organization frequently share knowledge and know with whom to share with.

TK4. People in my organization frequently collect knowledge and know how to share it with others.

TK5. People in my organization frequently share knowledge based on their expertise.

TK6. People in my organization frequently collect knowledge from others based on their expertise.

TK7. People in my organization share successful and unsuccessful experiences.

Perceived Organizational Support

POS1. My organization cares about my opinions.

POS2. My organization considers my goals and values.

POS3. My organization helps me to perform my job to the best of my ability.

POS4. My organization cares about my general satisfaction at work.

POS5. My organization would fail to notice even if I did the best job possible.

Psychological Ownership

PO1. This is my organization.

PO2. I sense that this organization is our company.

PO3. I feel a very high degree of personal ownership of this organization.

PO4. I sense that this is my company.

PO5. I feel this is our company.

PO6. Most people working for this organization feel that they own the company.

PO7. It is hard for me to think about this organization as mine.

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Title: Impact of Transformational and Transactional Leadership on Work Engagement with the Mediating Impact of Job Satisfaction and Emotional Regulation as a Moderator

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The author (s) declared no conflict of interest and have not received any funds for the project.

Impact of Transformational and Transactional Leadership on Work Engagement with the Mediating Impact of Job Satisfaction and Emotional Regulation as a Moderator

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Abstract

The textile sector in Pakistan significantly contributes to GDP and employment generation. Job satisfaction and work engagement in this sector are low. We examined the antecedents that directly and indirectly affect job satisfaction and work engagement. Using scales and measures used in past studies, we collected a sample of 287 respondents from four leading textile units in Karachi. We found “transformational leadership affects work engagement and job satisfaction.” Transactional leadership promotes “job satisfaction and work engagement.” Job satisfaction mediates “(i) transformational leadership and work engagement” and (ii) “transactional leadership and work engagement.” In the context of the moderating role, we found emotional regulation insignificantly moderates “transformational leadership and work engagement” and significantly moderates “transactional leadership and work engagement.” Therefore we recommend that the textile sector use both types of leadership styles. For complex and interrelated jobs, firms may use a transformational leadership style. And for routine

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tasks, we recommend using transactional leadership styles.

Keywords: *Transformational leadership, transactional leadership, emotional regulation, and work engagement.*

Introduction

A transformational leader inspires and motivates employees to increase their productivity and organizational performance (Bass, 1985). Kotamena et al. (2020) argue that transformational leaders are role models and support and help in employees' development. Transactional leadership refers to a leadership style in which the leaders motivate employees based on rewards and punishments (Changar & Atan, 2021). Such leaders specifically communicate what they expect from the employees and what employees must deliver (Jacobsen et al., 2022). Transactional leaders reward employees with salary increments, bonuses, and other benefits if they deliver as per the leaders' expectations (Efanda & Iswahyuni, 2021). At the same time, when employees fail to deliver, they do not get salary increases, bonuses other benefits. Thus, we argue it is an exchange relationship (Skopak & Hadzaihmetovic, 2022).

Work engagement is a positive behavior that enhances employees' work-related outcomes and makes them highly energetic and dedicated (Wee & Lai, 2022; Rahmadani & Schaufeli, 2022). Therefore, they are more productive than others (Rahmadani & Schaufeli, 2022). Other hallmarks of work engagement are fidelity and immersion. The former refers to involvement, taking pride in their actions, and accepting challenges; the latter refers to being concentrated and happily occupied with work (Pranitasari, 2022).

Work engagement enhances employees' involvement in work-related assignments, so they take the initiative and complete difficult jobs enthusiastically. It enhances employees' connectivity, often resulting in innovative business processes (Kundi, Sardar, & Badar, 2022). Chen and Fellenz (2020) assert that employees' implicit engagement refers to their affirmative responses to organizational programs and practices. A stable work environment promotes engagement. Employees are happy in an environment that aligns with their organizational values (Borst, Kruyen, & Lako, 2019). Positive and negative feelings affect employees and leaders. Good leaders control and manage employees' emotions (Drigas & Papoutsis, 2019).

Job satisfaction is how employees feel about their jobs. It is employees' positive and negative judgments about their jobs. A good career makes employees feel that they have a purpose. At the same time, unpleasant tasks and long working hours make employees feel unvalued (Taheri, Miah, & Kamaruzzaman, 2020). It thus is employees'

emotional judgment of their jobs. Besides other factors, employees' cognitive and affective responses relate to job satisfaction (Karabati, Ensari, & Fiorentino, 2019).

Extant literature documents that transformational leaders influence "structure outcomes, including commitment, citizenship behavior, job satisfaction, and job performance" (Anselmann & Mulder, 2020). Leaders appreciate employees with a low intention to switch and a willingness to improve their skills and productivity. Most individuals have different working styles. Therefore, they are more satisfied if they can follow their working styles. If leaders know how to nurture employees, it will significantly improve their productivity (Rafiq et al., 2022). Many studies are available on transformational and transactional leadership (Passakonjaras & Hartijasti, 2020). But there is a need for more studies on the "impact of transactional and transformational leadership on work engagement and job satisfaction" with the "mediating effect of job satisfaction and the moderating effect of emotional regulation in a workplace."

Literature Review

Transformational Leadership

Transformational leadership has now become a widely researched concept. It helps followers fit comfortably into the organizational structure (Kotamena et al., 2020). Contrarily transactional leaders have predefined standards for the employees' performance. Such leaders punish the employees who fail to meet those standards and reward high-performing employees (Eliyana et al., 2019). In the literature, we found ample support for the association between "transformational leadership and work-related outcomes" (Kwan, 2020). Despite much research on transformational leadership, it remains an understudied construct (Siangchokyoo et al., 2020). Mahmood et al. (2019) assert that transformational leaders develop a conducive environment in an organization and increase employees' intrinsic motivation leading to innovation and creativity.

Transactional Leadership

Transactional leaders motivate employees through an "exchange mechanism" of rewards and punishment (Ugwu & Okore, 2020). Transaction leadership is effective for achieving short-term objectives. Its effectiveness decreases in achieving long-term objectives and when the organization is in the process of changes (Asrar-ul-Haq & Anwar, 2018). Puni et al. (2021) assert that much literature on the interaction of transformational-transactional leadership and its effect on work-related outcomes are available, but most results are inconclusive.

Emotional Regulation:

Emotion regulation describes individuals' ability to modulate their emotional state and expression when dealing with others (Roth et al., 2019). Theories of emotional regulation stress that emotional regulation is not a "static and singular action but is an adaptive cognition and physiological response." It includes positively reacting to the emotions of others (Tamir, Vishkin, & Gutentag, 2020). All individuals have emotions, but how they react and control them varies. Bettis et al. (2022) suggest that individuals consciously and unconsciously regulate their emotions, including how to react and express themselves when exposed to a stimulus. Individuals with the capacity to regulate their emotions can suppress them if they feel it may hinder their success (Vanderlind et al., 2020).

Work Engagement

Work engagement connects employees "physically and cognitively" with their work-related assignments (Wee & Lai, 2022). Most researchers believe work engagement is "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption." Adnan et al. (2020) suggest apart from other antecedents, "job fit, affective commitment, and psychological climate" promotes work engagement (Decuyper & Schaufeli, 2020). Leadership Member Exchange Theory suggests a strong relationship between leaders and work engagement (Rahmadani & Schaufeli, 2022). Researchers have aligned work engagement with self-actualization (Pranitasari, 2022; Adnan et al., 2020).

Job Satisfaction:

Organizations review employees' performances based on job satisfaction. Employees with a "positive attitude toward their jobs" are more satisfied and committed to their organizations leading to increased organizational performance (Karabati, Ensari, & Fiorentino, 2019). Researchers have extensively studied job satisfaction from different contexts and in different domains. The performance of highly satisfied employees is far superior than dissatisfied employees. Taheri, Miah, and Kamaruzzaman (2020) assert that satisfied employees make fewer mistakes, have lower absenteeism, and have a low turnover intention. Besides other factors, job satisfaction depends on "the nature of work, supervision, fringe benefits, contingent rewards, operating procedures, and co-workers" (Karabati et al., 2019).

Conceptual Framework

We have developed a conceptual framework in Figure 1, depicting four direct, two mediating, and two moderating relationships.

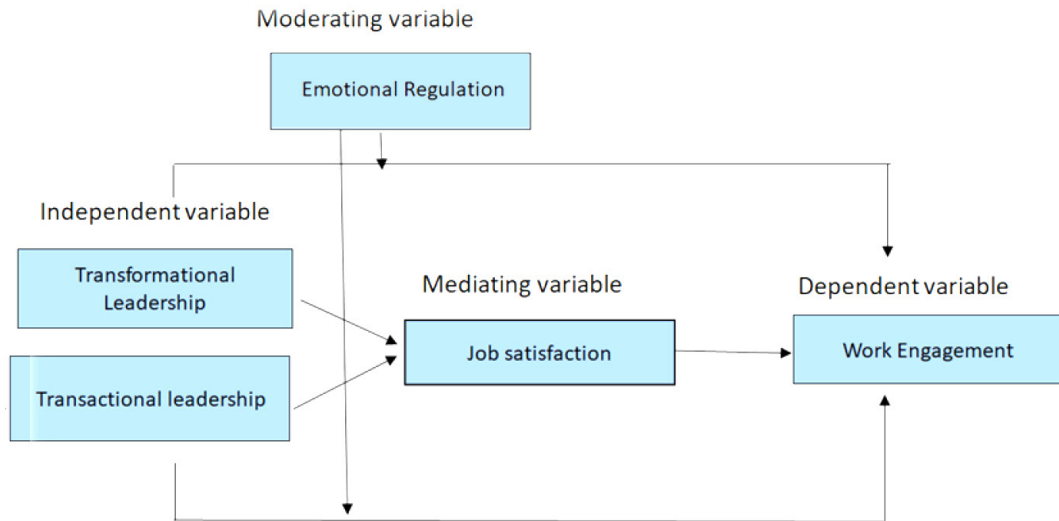


Figure 1: Conceptual Framework

Hypotheses Development

Transformational Leadership and Work Engagement

Internal communication (e.g., meaningful goals and peace of mind) and external communication, (e.g., resource availability) promote work engagement (Anselmann & Mulder, 2020). Leaders use these internal and external communications to involve employees. Transformational leaders set challenging but achievable goals for their subordinates (Amor, Vázquez, & Faíña, 2020). Consequently, employees look beyond self-interest and focus on collective goals. Martinez et al.(2020) assert that transformational leaders focus on achieving organizational goals by sacrificing personal goals.

Transformational leaders use “intrinsic values” to promote employee involvement. Therefore, members with inspirational motivation may believe that collective goals make sense. Transformational leaders comfort members in dealing with difficult goals and improve problem-solving skills (Balwant, Mohammed, & Singh, 2020). In short, transformative leaders help members find solutions to work-related issues and give them timely positive feedback, leading to increased work engagement (Lai et al., 2020). Apart from the direct association between transformational leadership and work engagement, we argue that emotional regulation may have a “varying effect” on transformation relations and work engagement.

H1: Transformational leadership “positively affects work engagement.”

H2: Emotional regulation “moderates transformational leadership and work engagement.”

Transactional Leadership and Work Engagement

Besides the direct association between transaction leadership, we argue that emotions may have a varying effect on transactional leadership and work engagement. Extant literature documents a positive association between “leaders’ contingent rewards and employees’ workplace attitudes and behavior” (Milhem, Muda, & Ahmed, 2019). Transactional leadership promotes work engagement by providing “contingent rewards and increasing their creativity, self-belief, and optimism” (Edelbroek et al., 2019). Jangsiriwattana (2019) asserts that transactional leadership stimulates extrinsic motivation, but intrinsic motivation may suffer as it does not meet the psychological needs necessary for learning, growth, and development. Contrarily transformational leaders fulfill employees’ psychological needs by praising, supporting, and encouraging employees (Lai et al., 2020).

H3: Transactional leadership “positively affects work engagement.”

H4: Emotional regulation moderates “transactional leadership and work engagement.”

Transactional and Transformational Leaderships and Job Satisfaction

Apart from different literature ship styles, most contemporary researchers have focused on transactional and transformational leadership styles and their related organizational outcomes (Sunarsi et al., 2021). Transactional leaders motivate employees based on the leader-follower exchange mechanism. Transactional leaders reward followers if they follow the direction and will of the leaders (Nurlina, 2022). The rewards could be negative or punitive (Hassi, 2019). If followers comply with the leaders’ direction and wish, leaders reward employees by praising them and giving recognition. At the same time, transactional leaders take punitive actions against employees whose performance are below their expectation (Mickson & Anlesinya, 2020). Dartey-Baah et al. (2021) argue that transactional leaders’ four critical facets are “contingent rewards, active management by exception, passive management by exception, and laissez-faire.”

Researchers assert that transformational leadership is the other extreme of transactional leadership (Purwanto et al. 2021). Transformational leadership is all about facilitating and providing support to employees so they can understand and resolve the issues they face at the workplace (Dung et al., 2020). Transformational leaders,

in contrast to transactional leaders, inspire and motivate employees for their self-development and the organizations (Labrague, Nwafor, & Tsaras, 2020). Employees, due to the positive and supportive behavior of transformational leadership, get excited and energized, which helps achieve common goals (Dappa, Bhatti, & Aljarah, 2019).

Despite the difference between transformational and charismatic leadership, many researchers have used them interchangeably. Transformational leaders focus on four dimensions: “charisma, communication, intellectual stimulation, and individualized consideration”(Labrague, Nwafor, & Tsaras, 2020). Charisma is one of the qualities of transformational leaders. Charismatic leaders are often self-centered, which is one of the negative effects of charismatic leadership. The relevance of transformational leadership is more with the upper management than lower management (Brown, Marinan, & Partridge, 2020). Researchers believe transactional and transformational leaderships promote job satisfaction, leading to organizational growth and sustainability (Mangundjaya & Amir, 2021). Sunarsi et al. (2021) also agree with past studies documenting “transactional and transformational leaderships promote job satisfaction and work engagement.”

Based on empirical research, Skopak and Hadzaihmetovic (2022) concluded that the “contingent rewards” of transactional leaders and “individualized consideration” of transformational leaders promote job satisfaction. And transactional and transformational leadership promotes job satisfaction and career development. Dappa, Bhatti, and Aljara (2019) document that transformational leadership inspires employees leading to job satisfaction. Hannah et al. (2020) assert that transformational leadership focuses on “exploratory innovation,” while transactional leadership facilitates “existing knowledge and exploitative innovations.” All these factors, directly and indirectly, promote job satisfaction and work engagement (Dappa, Bhatti, and Aljara 2019). The effects of transactional and transformational leadership on job satisfaction and work engagement are inconsistent. In some situations, researchers found “transactional and transformational leadership positively affects satisfaction and work engagement,” while in others, researchers document that “transactional and transformational leadership negatively affect job satisfaction and work engagement” (Mickson & Anlesinya, 2020).

H5: Transformational leadership “positively affects job satisfaction.”

H6: Transactional leadership “positively affects job satisfaction.”

H7: Job satisfaction mediates “transformational leadership and work engagement.”

H8: Job satisfaction mediates “transactional leadership and work engagement.”

Methodology

Population and Sampling

The study has focused on the textile sector, the eighth-largest exporter of textiles accessories in Asia. This sector has “1,221 ginning units, 442 spinning units, 124 large spinning units, and 425 small units.” Its contribution towards “GDP is 8.5%, employing 45% of the country’s total labor force” (Textile as Art, 2022). The study has calculated the minimum sample size based on indicators variables and cases for each variable. We have 37 indicators and have selected five cases for each indicator. Based on these, we arrived at a sample size of 185 (Hair., 2022). We selected four leading textile manufacturers and distributed 300 questionnaires, of which we received 287 questionnaires. The textile industry sample frame was unavailable; therefore, we used convenience sampling.

Scales and Measures

Table 1 summarizes the constructs and items adopted from earlier studies. It shows constructs, sources, items, and reliability in earlier studies.

Table 1: Scales and Measures

Constructs	Sources	Reliability in Past Studies	Items
Emotional Regulation	Gouveia et al. (2021)	0.810 to 0.872	10
Transformational Leadership	Avolio & Bass (1995)	0.801 to 0.882	6
Transactional Leadership	Laohavichien et al.(2009)	0.764 to 0.894	5
Work Engagement	Seppälä et al.(2009)	0.706 to0.806	8
Job Satisfaction	Macdonald and MacIntyre,(1997).	0.756 to 0.855	8

Common Method Bias and Mutli-Colinearity

Common method bias and multi-colinearity can adversely affect the results. Therefore we generated VIF values and found all the VIF values are below 3.00, suggesting that the constructs have no issues with common method bias and multi-colinearity (Kock, 2015).

Respondents Profile

The study focused on the textile sector and collected 287 from Karachi’s four leading textile units. We have presented the respondents’ profile in Table 2.

Table 2: Respondents’ Profiles

Demographics	Category	Percentage
Gender	Males	64%
	Females	36%
Marital Status	Single	59%
	Married	41%
Education	Intermediate	16%
	Bachelors	34%
	Masters	23%
	Diploma	27%
Income	Upto Rs. 25000	09%
	Rs. 25000-Rs.35000	28%
	Rs.35,000-Rs.45000	35%
	Rs. 45,000 - Rs. 55,000	15%
	Rs.55,000 plus	13%
Management Levels	Junior	30%
	Middle	48%
	Senior	22%

Statistical Analysis

The study used Smart PLS for statistical analysis. Compared to other software, it generates graphical models using the partial least squares (PLS) modeling method. It allows researchers to test reflective and formative models. It automatically generates results related to the model’s reliability, validity, model fitness, and predictive power of the model (Ringle, Da-Silva, & Bido, 2015).

Results and Findings

Measurement Model Analysis

We have presented the measurement model in Figure 2. And in the subsequent sections, we have discussed results related to reliability and validity analyses.

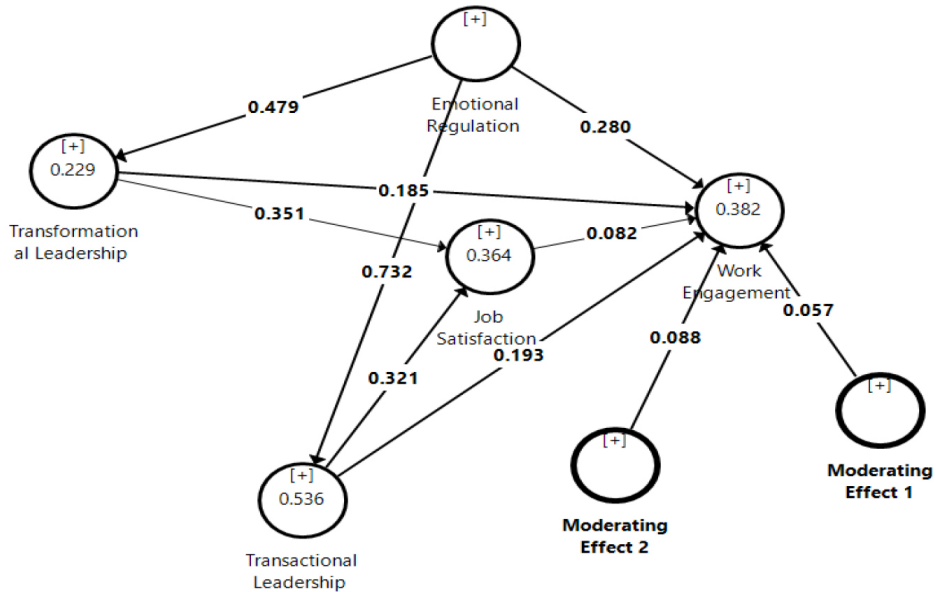


Figure 2: Measurement Model

Reliability and Convergent Validity

The study has summarized results related to reliability and validity in Table 3.

Table 3: Reliability and Validity

	Items	Loadings	AVE	CR	Rho A
Emotional Regulation	ER 4	0.872	0.721	0.912	0.877
	ER 5	0.815			
	ER 6	0.859			
	ER 8	0.754			
	ER 9	0.880			
Job Satisfaction	JS 1	0.820	0.730	0.919	0.885
	JS 2	0.842			
	JS 3	0.839			
	JS 6	0.860			
	JS 7	0.907			
	JS 8	0.768			
Transformational Leadership	TFL 1	0.856	0.714	0.912	0.872
	TFL 2	0.737			
	TFL 3	0.755			

	TFL 4	0.789			
	TFL 5	0.800			
Work Engagement	WE 3	0.754	0.768	0.908	0.850
	WE 5	0.862			
	WE 7	0.814			
	WE 8	0.842			
	WE 9	0.884			
Transactional Leadership	TSL 2	0.744	0.714	0.907	0.872
	TSL 3	0.743			
	TSL 4	0.773			
	TSL 5	0.807			

The results presented in Table 3 show that the “composite reliability values are greater than 0.70.” The highest is for job satisfaction (CR=0.919), and the lowest is for transactional leadership (CR=0.907), suggesting that the latent variables used in the study have good internal consistency. Also, all the “AVE values and composite reliability values are greater than 0.70,” suggesting the latent variables used in the study do not deviate from the requirements of convergent validity (Hair et al., 2022).

Predictive Power of the Model

The study used “R square and Q square” values to assess the model’s predictive power. Table 4 shows that all the “R square values are greater than 0.20, and Q square values are more than zero.” Thus, we have inferred that the models have adequate predictive power (Ringle et al., 2015)

Table 4: Predictive Power of the Model

	R Square	R Square Adjusted	SSO	SSE	Q² (=1 -SSE/SSO)
Job Satisfaction	0.364	0.363	3594	2572.167	0.284
Transactional Leadership	0.536	0.536	4792	2969.227	0.38
Transformational Leadership	0.229	0.229	4792	4181.349	0.127
Work Engagement	0.382	0.378	3594	2576.22	0.283

Fit Indices

The study has generated fit indices of the measurement model, presented in Table 5. The results suggest “SMR values are less than 0.08 and NFI values are greater than 0.80.” Thus we have inferred that the model has adequate fitness (Hair et al., 2022).

Table 5: Fit Indices

	Saturated Model	Estimated Model
SRMR	0.074	0.073
d_ ULS	0.936	1.485
d_ G	0.352	0.374
Chi-Square	2539.583	2525.709
NFI	0.809	0.810

Discriminant Validity

Researchers suggest assessing the discriminant validity based on Fornell and Larcker (1981) criteria and HTMT ratio. The results of the two methods are presented in Tables 6 and 7. The results in Table 6 show that “AVE’s square roots are greater than Pearson’s values,” suggesting that the constructs used in the study are “unique and distinct.” Similarly, the results in Table 7 show that HTMT ratios are “within the prescribed limit of 0.90,” suggesting that the constructs based on the HTMT ratio also fulfill the requirement of discriminant validity (Fornell and Larcker, 1981; Wong 2013).

Table 6: Fornell Larcker

	ER	JS	TRL	TL	WE
Emotional Regulation	0.849				
Job Satisfaction	0.446	0.89			
Transactional Leadership	0.732	0.535	0.845		
Transformational Leadership	0.479	0.547	0.612	0.748	
Work Engagement	0.524	0.4	0.538	0.479	0.876

Table 7: HTMT

	ER	JS	TL	TRL	WE
Emotional Regulation	-				
Job Satisfaction	0.504				
Transactional Leadership	0.842	0.608			
Transformational Leadership	0.591	0.685	0.766		
Work Engagement	0.603	0.461	0.629	0.603	-

Structural Model and Hypotheses Results

Before generating a structural model, we fulfilled all the requirements related to “validity, reliability, predictive power, and fit indices,” which we have discussed in the preceding sections. The study has presented the structural model in Figure 3, and the hypotheses results in Table 8.

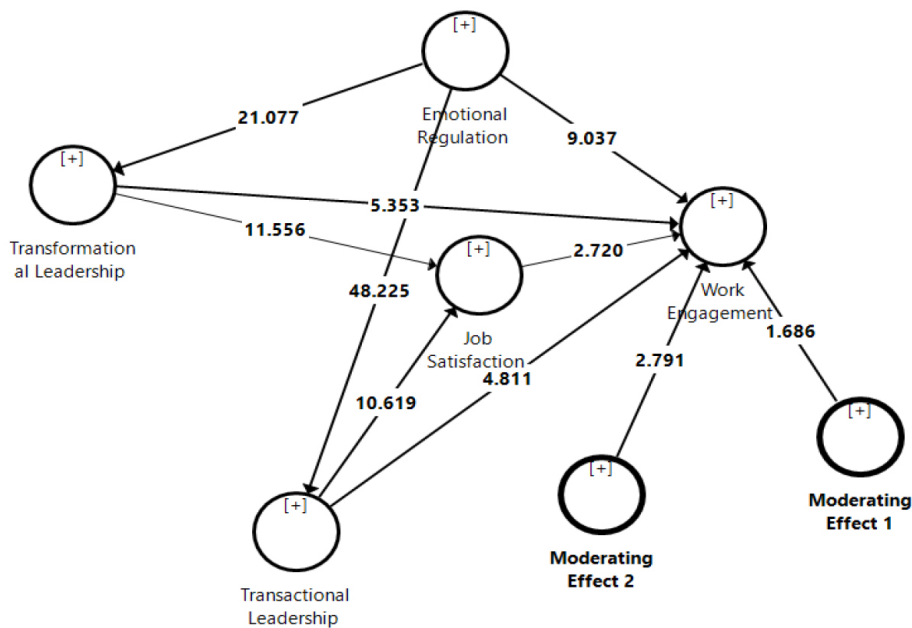


Figure 3: Structural Model

Hypotheses Results

We articulated eight hypotheses, including four direct, two mediating, and two moderating. Table 8 depicts the hypothesis results.

Table 8: Hypothesis Results

	β	t Stat	P Values	Results
Transform. Leadership -> Work Engagement (H1)	0.185	5.353	0.000	Accepted
Moderating Effect 1 -> Work Engagement (H2)	0.057	1.686	0.094	Rejected
Transact. Leadership -> Work Engagement (H3)	0.193	4.811	0.000	Accepted
Moderating Effect 2 -> Work Engagement (H4)	0.088	2.791	0.005	Accepted
Transformational Leadership -> Job Satisfaction (H5)	0.351	11.556	0.000	Accepted
Transact. Leadership -> Job Satisfaction (H6)	0.321	10.619	0.000	Accepted
Transform. Leader -> Job Sati. ->Work Engag. (H7)	0.290	2.670	0.008	Accepted
Transact Leader. -> Job Sat. – Work Engag (H8)	0.026	2.674	0.008	Accepted

We found support for all the direct hypotheses. Regarding the direct hypothesis, we have the strongest association between “transformational leadership and job satisfaction” ($\beta=0.351$), followed by a relationship between “transactional leadership

and job satisfaction" ($\beta=0.321$), the association between "transactional leadership and work engagement" ($\beta=0.193$), and the association between "transformation leadership and work engagement" ($\beta=0.185$). We found support for all indirect hypothesis except the moderating effect of "emotional regulation on transformational leadership and work engagement.

Discussion and Implications

The findings are important for the textile sector of Pakistan. While monitoring employees' performance, the textile sector needs to identify the right leadership styles to enhance employee satisfaction and work engagement. We found that transactional and transformational leadership affects employees' commitment and satisfaction. Therefore, we recommend that the textile sector use both types of leadership styles. For complex and interrelated jobs, firms may use a transformational leadership style. And for routine tasks, we recommend using a transactional leadership style.

Conclusion

This study examined the antecedents that directly and indirectly affect employees' job satisfaction and work engagement in the local textile sector. The study tested eight hypotheses: four direct, two mediating, and two moderating. We found transformational leadership affects "work engagement and job satisfaction." Regarding transactional leadership, we found transactional leadership "promotes job satisfaction and work engagement." The study also found job satisfaction mediates "transformational leadership and work engagement" and "transactional leadership and work engagement." In the context of the moderating role, we found emotional regulation insignificantly moderates "transformational leadership and work engagement" and emotional regulation significantly moderates "transactional leadership and work engagement."

Limitations and Future Research

The study has focused on the textile sector of Pakistan. A comparative study between two sectors may bring further insight into the discussed phenomenon. Other researchers may explore other sectors. We have examined the impact of transformational and transactional leadership styles on work engagement and job satisfaction. We advise future researchers to examine their impact on job-related consequences, including turnover intentions, employees' well-being, and work-life balance. The study used emotional regulation as a moderator; others can use emotional intelligence and cultural aspects as moderators. We have used job satisfaction to mediate between leadership styles and work engagement. We advised others to use other job-related consequences as mediators.

Annexure 1

Constructs and Items Used in the Questionnaire

Emotional Regulation

- ER1. I change my thoughts when I have positive emotions (such as joy or amusement).
- ER2. I keep my emotions to myself.
- ER3. I change my thoughts when I want to feel less negative emotions (such as sadness or anger).
- ER4. When I am feeling positive emotions, I am careful not to express them.
- ER5. When I face with a stressful situation, I think about it in a way that helps me stay calm.
- ER6. I control my emotions by not expressing them.
- ER7. I change my thoughts about the situation when I have positive emotions.
- ER8. I control my emotions by changing the way I think about the situation.
- ER9. When feeling negative emotions, I make sure not to express them.
- ER10. When I want to feel less negative emotion, I change how I think about the situation.

Transformational Leadership

- TFL1. My supervisor instills pride in me for being associated with him/her.
- TFL3. My supervisor appreciates my efforts.
- TFL4. My supervisor talks optimistically about the future.
- TFL5. My supervisor keeps track of all mistakes.
- TFL6. My supervisor helps in dealing with problematic issues.

Transactional Leadership

- TSL1. My supervisor commends me when I exceed my productivity goals.
- TSL2. My supervisor frequently acknowledges my good performance.
- TSL3. I would expect disapproval from my supervisor if I performed poorly.
- TSL4. My supervisor lets me know about it when I perform poorly.
- TSL5. My supervisor conveys my productivity if it is not up to par.

Work Engagement

- WE1. I have received recognition for doing my job well.
- WE2. My supervisor seems concerned about my welfare.
- WE3. The organization's mission makes me feel that the work I do matters.
- WE4. I have friends at work.

WE5. My supervisor takes my ideas and opinions seriously.

WE6. My organization provides all the materials, tools, and equipment that I need to do my job

WE7. The people I work with do a good job.

WE8, I will still be employed here two years from now.

Job Satisfaction

JS1. I am proud to work for this organization.

JS2. I know what this organization expects from me.

JS3. I am satisfied with the amount of feedback I receive about my work.

JS4. I receive enough training to handle my tasks.

JS5. I plan to work here for a long time.

JS6. I am satisfied with my job description.

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

The Impact of Emotional Intelligence on Job Performance with a Mediating Role of Job Satisfaction

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Abstract

Despite their contribution toward the economy and employment generation, SMEs in Pakistan suffer due to low productivity and poor job performance. Thus we examined factors affecting job performance and the “mediating impact of job satisfaction on emotional intelligence and job performance.” We collected a sample of 382 local SME employees and used Smart PLS for data analysis. The study found “self-awareness, self-regulation, emotional intelligence, and job satisfaction positively affect job performance.” Emotional intelligence “affects job satisfaction,” and job satisfaction mediates “emotional intelligence and job performance.” However, “social skills, motivation, and empathy” insignificantly affect job performance. Emotional intelligence helps understand and manage others’ emotions and solve problematic issues. Therefore firms must arrange seminars and workshops on emotional intelligence for their employees regularly. Although we did not find a significant effect of social skills and empathy on job performance, they still are important precursors to job-related outcomes, and firms must focus on these aspects as well.

Keywords: *Emotional intelligence, job satisfaction, job performance, small and medium enterprises (SMEs).*

Introduction

Employee performance, in general, is a critical outcome variable in every

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organizational setup (Narayanan, Rajithakumar, & Menon, 2019). Many studies have examined the antecedents of job satisfaction and performance, but few have examined the serial mediating role of job satisfaction (Han, Yin, Wang, & Zhang, 2020; Dodanwala, Santoso, & Yukongdi, 2022). Employees' quality of work performance is critical in determining the organization's efficiency and output (Leitão, Pereira, & Gonçalves, 2019). Antecedents, including "self-awareness, self-regulation, social skills, motivation, and empathy," influence employee performance, which this study has included in its conceptual framework.

Organizational performance depends on the employees' emotional intelligence (Edward & Purba, 2020). Emotional intelligence is a crucial and powerful tool for any organization to compete in the market. Employees with high emotional intelligence are more efficient and effective as they control their emotions and anticipate how others react (Sembiring et al., 2020). Managers and top management must understand and learn to regulate and manipulate emotions according to their requirements (Alonazi, 2020). Jena (2022) asserts that for the sustainability and growth of an organization, the management must identify the factors that promote employee job satisfaction and performance. Given its importance, the study has examined the effect of "self-awareness, self-regulation, motivation, and emotional intelligence on job performance. The effect of job satisfaction on job performance. And the "mediating role job-satisfaction on emotional intelligence and job performance."

Literature Review and Hypotheses Development

Emotional Intelligence

Studies found a relationship between intelligence and emotional intelligence in the literature published 2000 years ago (Mayer, Salovey, & Caruso, 2004). Initially, between 1900-1960 the literature separately discussed intelligence and emotions. The researchers first used emotional intelligence in the 1960s (Mayer, Salovey, & Caruso, 2004). In early 1970, researchers frequently examined the association between emotions and cognitive processes. Mayer and Salovey coined emotional intelligence in the early 1990s, which Daniel Goleman popularized in 1995 (Beck, 2013). The new concept gave a different perspective on the association between emotion and intelligence. It assumes that individuals can "understand and express and control their emotions and others' behaviors," resulting in positive outcomes (MacCann et al., 2020). O'Connor et al. (2019) assert that individuals with high emotional intelligence have better social interaction with their employees. Emotional intelligence has several positive implications for individuals' daily life and work. Recent literature suggests emotional intelligence affects

organizational citizenship behavior (Turnipseed & Vandewaa, 2012), job commitment (Nikolaou & Tsaousis, 2002), job performance (Chong, Falahat, & Lee, 2020), and job satisfaction (Wen, Huang, & Hou, 2019).

Job Satisfaction

Job satisfaction is important for the sustainability and growth of an organization (Stamolampros et al., 2019). Most employees spend considerable time at work, and their satisfaction level affects their outcomes and actions (Rajamohan, Porock, & Chang, 2019). Despite abundant studies on this phenomenon, researchers spend considerable time improving employees' job satisfaction and outcomes. Researchers have conceptualized job satisfaction differently and from different perspectives. Most researchers agree it is "a positive or pleasurable emotional state resulting from the appraisal of one's job or job experiences" (Locke et al., 1976; Specchia et al., 2021). Employee satisfaction depends on their jobs' nature and expected outcomes (Chandrasekara, 2019). These outcomes depend on employees' "needs, beliefs, values, and desires" (Lu, Zhao, & While, 2019). Specchia et al. (2021) believe alignment in employees' "personal factors" and expectations of what a job offers reflect job satisfaction.

Job Performance

Job performance refers to "the individuals' job-related activities at work" (Malureanu, Panisoara, & Lazar, 2021). It also refers to how employees efficiently and effectively convert raw materials into finished goods (Guo et al., 2020). Besides other factors, high job performance depends on individuals' leadership traits, knowledge, and skills. Individuals with predefined goals are higher achievers than others (MacCann et al., 2020). "Intrinsic and extrinsic motivations" are precursors of "job performance and satisfaction" (Yusuf, 2021). If firms withdraw extrinsic motivators, the performance of the employees may decrease in the long run. A good leader induces intrinsic motivation in the employees, which significantly contributes to employees' productivity and the organization's success and sustainability (Zeng et al., 2022).

Self Awareness and Job Performance (H1)

Self-awareness is a broad concept, and it has different notions. It consists of "self-comparison introspection, self-evaluation, and recurring behavior" (Huggins et al., 2021). Individuals distinguish and adjust themselves through internalized qualities known as situational self-awareness, which promotes stability and regularity (Carden, Jones, & Passmore, 2022). Individuals tend to look inwards to reflect them through a process known as dispositional self-awareness. This process has negative and positive connotations (Adil & Kamal, 2020). Individuals with negative self-perception focus on "negative emotions, depression, mood, weakness." Consequently, it becomes a hurdle

in solving social problems (Gopinath, 2020). At the same time, positive self-awareness promotes “in-depth self-awareness and desire for self-improvement” (Newman & Nezlek, 2019). Carden, Jones, and Passmore (2022) assert that both affect job performance. Extant literature documents that self-awareness positively correlates with workplace and employees’ health and well-being (Hall, Garabiles, & Latkin, 2019). Many past studies document that job performance and satisfaction outcomes have stemmed from self-awareness (Kim, Schuh, & Cai, 2020; Budworth and Chummar, 2022).

H1: Self-awareness positively affects job performance.

Social Skills and Job Performance (H2)

Social skills are “competencies regulating human relationships.” Such skills are important for increasing productivity and job performance (Yu et al., 2022). Researchers assert that social skill is critical to managing and regulating employees apart from emotional intelligence (Idris et al. 2022). Zaman et al. (2019) asserts that managers lacking social skills may be unable to collaborate with the workers and may not manage the team effectively. Researchers believe social skills include “survival and interpersonal skills” necessary for conflict resolution (Spade, 2020). Survival skills relate to acquiring basic skills necessary for human survival. With this skill, business managers learn to manage employees efficiently in the business environment (Gentina, Chen & Yang, 2021). Managers in a business environment face different types of problems, which they can resolve if they possess problems solving skills. It also helps managers achieve organizational goals by managing and controlling employees efficiently (Sakellariou et al., 2021).

H2: Social skill positively affects job performance.

Motivation and Job Performance (H3)

Besides other factors, employees motivation promotes job performance and organizational sustainability (Andreas, 2022). In the present era of globalization, businesses have to deal with internal and external challenges (Arif, Zainudin, & Hamid, 2019). Businesses can only survive on their ability to integrate employees’ motivation and production factors, such as machines and materials (Riyanto, Endri, & Herlisha, 2021). Pancasila, Haryono, and Sulistyo (2020) assert that firms with a team of highly motivated employees will be more productive in contributing toward profit and increased market share. Adetola et al. (2022) assert leaders inspire and help individuals to achieve their goals. Motivation has stemmed from the word motive, which relates to “needs, desires, wants and drives of persons” (Hajiali et al., 2022). Highly motivated employees are happier, more satisfied, and more productive and efficient (Luqman et al., 2020).

H3: Motivation positively affects job performance.

Empathy and Employees Performance (H4)

Leaders with an empathic relationship with employees motivate them and enhance their job performance (Raina, 202; Chong et al., 2021). Good managers understand the attitudes and behaviors of the employees. This understanding allows managers to manage and monitor employees' performance (Nowac & Zak, 2020; Arghode et al., 2022). Empathy stems from psychology which means "controlling one's behavior and thought." Empathic leaders focus on the employee's emotional reactions and help solve problems at work (Raina, 2022).

Leader-Member-Exchange (LMX) theory, developed in 1975, explains the interactions between leaders and subordinates (Jian, 2022). The theory postulates that employees with a low perception of the leaders will perform poorly (Arghode et al., 2022). At the same time, leaders with empathic behavior will command respect from their subordinates. Employees reciprocate such leaders by developing positive attitudes and behaviors towards work (Haynie et al., 2019). Lanier (2021) asserts that empathic leaders do not adopt aggressive behavior despite receiving negative feedback. Such leaders understand the emotions and feelings of the employees and listen to their problems. Good leaders have high ethical values that inspire and motivate employees to give good job performance (Tufail & Sandhu, 2022).

H4: Empathy positively affects job performance.

Self-Regulation and Job Performance (H5)

Individuals, through self-regulation, manage and control their behavior at the workplace. Organizations' success and sustainability depend on creating an environment that enhances employees' self-regulation traits, a critical precursor of job performance (Bakker & de-Vries 2021). Bakker and Oerlemans (2019) suggest that firms can improve employees' self-regulation traits by communicating their expectations regarding dress codes, language, and other behaviors. Firms must encourage employees to take initiative and responsibility (Wolters & Brady, 2021). Mitchell et al. (2019) assert that firms must promote a conducive environment for employees to communicate freely without fear and criticism. Such an environment correlates with employees' self-regulation and job performance. Additionally, providing employees with the required resources for development and positive feedback can enhance their self-regulation traits and job performance. Apart from motivation, rewards and recognition enhance employees' self-regulatory behaviors (Van-Hooft et. al., 2021).

Marques-Quinteiro et al. (2019) assert that self-regulation is important at work, enabling employees to stay focused and productive. Self-regulation helps employees to control their thoughts and feeling to achieve desired outcomes. Precursors of the self-regulation process are the “ability to recognize and manage emotions, set goals, delay gratification when necessary” (Robson, Allen, & Howard, 2020).

H5: Self-regulation positively affects job performance.

Emotional Intelligence and Job Performance (H6)

Many past studies in different domains found that emotional intelligence enhances job performance (Miao, Humphrey, & Qian, 2021). Researchers believe that individuals with high emotional intelligence are high achievers than others. Such individuals perpetually focus on learning and acquiring new knowledge (Gopinath & Chitra, 2020). Contrarily, individuals who lack open-mindedness are less resilient when facing problems (Suleman et al., 2020).

Two broad types of emotional intelligence models exist: “the ability-based emotional intelligence model and the trait-based emotional intelligence model.” Both models individually and collectively affect job performance (Wen, Huang, & Hou, 2019). Emotional intelligent leaders encourage individuals to communicate freely and without fear (Javed, Hock, & Asif, 2020). Such an environment is a precursor of productivity and job performance. Researchers assert that it promotes innovativeness in employees, positively affecting their job performance (Aqqad et al., 2020; Wong and Law 2002). Managers with high emotional intelligence delegate jobs based on employees’ capacity and capability, which enhances employees’ motivation and job performance.

H6: Emotional intelligence positively affects job performance.

Emotional Leadership and Job Satisfaction (H7)

Alismail et al. (2022) assert that individuals with high emotional intelligence can regulate their and employees’ emotions. Such emotional regulation traits help leaders to instill positive attitudes toward work. Researchers assert that emotional intelligence helps leaders predict and manage work-related outcomes such as “productivity, job performance, and job satisfaction” (Alwali & Alwali, 2022; Rogowska & Meres, 2022). Despite the importance of the discussed relationship, limited literature is available. Given this gap, this study has included this relationship in its conceptual framework.

Jufrizen, Nadia, and Muslih (2022) stress that emotionally intelligent individuals are more resilient as they can identify the root cause of stress and develop strategies to

reduce it. Emotional intelligent leaders have the knack for assessing and regulating employees' "feelings, frustration, and stress," resulting in positive job satisfaction (Mérida-López et al., 2022). At the same time, individuals with low emotional intelligence lack awareness of their own and other emotions, so they cannot reduce stress and increase job satisfaction.

H7: Emotional intelligence positively affects job satisfaction.

Job Satisfaction and Performance Relationship (H8)

Past studies examined the "association between job satisfaction and performance" in different domains and sectors and found inconclusive results (Jufrizen, Nadia, & Muslih, 2022). Researchers believe job satisfaction and performance have bidirectional relationships. That is, job satisfaction affects performance, and performance stimulates job satisfaction (Winton, 2022).

Many studies in the SME sector have documented that highly satisfied employees are more efficient, highly productive, and have low turnover intention (Sun et al., 2022). Amin (2022) examined the "association between job satisfaction and job performance," and he found a significant association between these two variables, while a few found an insignificant association between these two variables (Hajiali et al., 2022). Winton (2022) believes that satisfaction increases workers' attitudes toward work, leading to increased job performance.

H8: Job satisfaction positively affects job performance.

Emotional Intelligence, Job Satisfaction, and Job Performance (H9)

Many factors, including "personal life to organization culture, job content, and tasks, manager's attitude financial reward," contributes towards job performance (Hwang & Park, 2022). Schlaegel, Engle, and Lang (2022) assert that promotions, salary, and growth affect job satisfaction leading to increased performance. However, employees' job performance levels may change due to their psychological state and mood (Kessi et al., 2022). Many studies document that "job satisfaction mediates emotional intelligence and performance" (Rogowska & Meres, .2022). O'Boyle & Ernst (2011), based on meta-analysis, documents that emotional intelligence significantly affects job performance. Researchers believe job satisfaction aligns with "withdrawal behavior, intention to quit, turnover, and organizational commitment." Emotional intelligence is directly and indirectly associated with job satisfaction and performance (Hwang & Park, 2022).

H9: Satisfaction mediates emotional intelligence and job performance.

Methodology

This part of the paper discusses the methodology it used. It includes the “nature of the study, population, sample size, sampling method, research instruments, instruments’ reliability & validity.” The section also discusses the methods used for data collection and analyses. This study has been based on the causal (explanatory) research design as it enables the researcher to evaluate the variables and assess the statistical relationship among them. We adopted a cross-sectional design in which data is collected during a set period (Levin, 2008).

Research Type and Data Collection Tool

The study used quantitative research as we explained the interrelated impacts and mechanisms of the selected constructs. Quantitative research also aspires the researchers to evaluate the relationships between the selected variables and explains the nature of those relationships, i.e., “causal, comparable, or correlational” (Frels & Onwuegbuzie, 2013). Considering the associated advantages, established recognition, and wide usage, we have used a questionnaire to “collect the data by conducting a survey.” The survey included collecting data online and personally visiting the target population.

The Population and Sample Size

The study focused on SMEs in Karachi. We targeted educated, well-informed employees who could independently comprehend and complete the questionnaires. The study used a convenience sampling technique to collect the data from the targeted population. After obtaining the respondents’ consent and briefing them about the study’s motives, we collected the data. We distributed 600 questionnaires and received 382 usable questionnaires.

Respondent Profile

Of 382 respondents, 43.98% (n = 168) were males, and 56.02% (n = 214) were females. In terms of education, 62.83% (n = 240) respondents had a high school level qualification, whereas 14.66% (n = 56) had bachelor’s degrees, 21.47% (n = 82) had master’s degrees, and 1.05% (n = 4) were Ph.D. Respondents with 1-5 years of job experience were 65.45% (n = 250), whereas 12.57% (n = 48) had 6-10 years of job experience. Respondents in the category of 11-15 years and 15+ years of job experience were 14.14% (n = 54) and 7.85% (n = 30), respectively.

Scale and Measure

The study has adopted the questionnaire from past studies. In Table 1, we have presented a summary containing constructs, sources, and items.

Table 1: Scale and Measures

Variable		Items
Self-Awareness	Sutton (2016)	18
Self-Regulation	Carey, Neal, and Collins (2004)	15
Motivation	Kanwal and Syed (2017)	6
Empathy	Spreng et al. (2009)	16
Social Skills	Mota, Matos, and Lemos, (2011)	9
Job Satisfaction	Freund (2015)	10
Job Performance	Kanwal and Syed (2017)	5

Note: we have measured emotional intelligence based on “self-awareness, self-regulation, motivation, empathy and social skills”

Data Analysis Techniques

Data analysis is the systematic synthesizing and organizing of data. It rationalizes and reduces the size of aggregated facts for statistical analysis (Creswell & Plano, 2010). Researchers can use Smart PLS for statistical analysis (Sebjan & Tominc, 2015). For data analysis, the study has used: “Correlations, Assessment of Measurement Model, Assessment of Structural Model and Sobel’s Test for mediation.”

We used structural equation modeling (SEM) with partial least squares (PLS) in Smart PLS 3 to analyze the data (Ringle et al., 2012). PLS-SEM is “robust on data noise and missing values, skewness, or multi-collinearity of the indicators with a small sample size compared to covariance-based SEM” (Cassel et al., 2000). It can also use “formative and reflective” indicators together (Bollen, 2011). The study analysis used a two-stage approach, i.e., measurement model assessment and structural model assessment. This approach has advantages over the one-step approach. The measurement model measures the association “between indicators and latent variables.” And the structural model measures “the relationship between latent variables” (Hair et al., 2017).

Results

Descriptive Statistics

In Table 2, we have depicted a summary related to descriptive analysis, as it helps in understanding the distribution of data. The results show the highest mean is for empathy (M=4.03, SD=0.44) and the lowest for job satisfaction (M=3.82, SD=0.63). Correlation values show the strength and direction of the relationship and tell how similar the two constructs are. We found the highest correlation is between empathy and motivation (R=0.690<.05), and the lowest between job satisfaction and self-awareness (R= 0.316<0.05).

Table 2: Mean, SD, and Correlations

Variable	M	SD	1	2	3	4	5	6	7
Self-Awareness	3.99	.62	1						
Self-Regulation	3.83	.45	.546	1					
Motivation	3.87	.48	.500	.598	1				
Empathy	4.03	.44	.519	.518	.690	1			
Social Skills	3.99	.44	.487	.523	.674	.754	1		
Job Satisfaction	3.82	.63	.316	.425	.471	.406	.442	1	
Job Performance	3.93	.58	.360	.525	.412	.411	.404	.513	1

Common Method Bias

Before examining the measurement model, we generated VIF values of the job performance and found that all the values were less than 3.75 suggesting the constructs have no issue related to common method bias and multi-collinearity. Refer to Table 3 for results (Tehseen et al., 2017).

Table 3: Common Method Bias

Variables	VIF
Empathy	3.601
Job Satisfaction	1.522
Motivation	3.051
Self-Awareness	2.156
Self-Regulation	2.242
Social-Skills	3.029
Emotional Intelligence	1.516
Job Performance	2.087

Factor Loadings

Factor loading explains the association between constructs and indicator variables. Table 4 shows the factor loadings of the items are greater than 0.70. And Table 5 depicts factor loading HOC.

Table4: Factor Loadings – LOC

Empathy		JP		JS		Motivation		SA		SR		SS	
Item	FL	Item	FL	Item	FL	Item	FL	Item	FL	Item	FL	Item	FL
EIE1	0.744	JP1	0.777	JS1	0.690	EIM1	0.604	EISA1	0.720	EISR10	0.757	EISS1	0.611
EIE10	0.665	JP2	0.693	JS2	0.647	EIM2	0.820	EISA10	0.688	EISR11	0.811	EISS10	0.863
EIE11	0.774	JP3	0.776	JS3	0.769	EIM3	0.737	EISA11	0.787	EISR12	0.740	EISS11	0.833
EIE12	0.885	JP4	0.719	JS4	0.763	EIM4	0.708	EISA2	0.728	EISR13	0.672	EISS12	0.740

EIE2	0.486	JP5	0.696	JS5	0.730	EIM5	0.605	EISA3	0.681	EISR14	0.671	EISS13	0.624
EIE3	0.571					EIM6	0.633	EISA4	0.731	EISR15	0.719	EISS2	0.697
EIE4	0.862					EIM7	0.797	EISA5	0.855	EISR1	0.712	EISS3	0.790
EIE5	0.801					EIM8	0.820	EISA6	0.871	EISR2	0.757	EISS4	0.773
EIE6	0.726					EIM9	0.738	EISA7	0.953	EISR3	0.680	EISS5	0.685
EIE7	0.721							EISA8	0.719	EISR4	0.798	EISS6	0.713
EIE8	0.665							EISA9	0.709	EISR5	0.675	EISS7	0.932
EIE9	0.527									EISR6	0.723	EISS8	0.564
										EISR7	0.639	EISS9	0.569
										EISR8	0.627		
										EISR9	0.662		

Table 5: Factor Loadings – HOC

Emotional Intelligence		Job Performance		Job Satisfaction	
Item	FL	Item	FL	Item	FL
Empathy	0.762	JP1	0.750	JS1	0.641
Self-Awareness	0.688	JP2	0.670	JS2	0.607
Self-Regulation	0.854	JP3	0.798	JS3	0.766
Social Skills	0.764	JP4	0.737	JS4	0.798
Motivation	0.801	JP5	0.705	JS5	0.777

Reliability and Validity

In Table 6, we have presented the summary of the reliability and convergent validity results. The results suggest that the constructs have good internal consistency since all Cronbach's Alpha values exceed 0.800. We also found that all composite reliability values are at least 0.800, and AVE values are greater than 0.500, suggesting the constructs fulfill the requirement of convergent validity (Wong, 2013)

Table 6: Reliability and Validity of Measurement Model

Scale	Cronbach's Alpha	Composite Reliability	AVE
Empathy	0.929	0.923	0.507
Job Performance	0.852	0.853	0.538
Job Satisfaction	0.843	0.844	0.520
Motivation	0.909	0.907	0.522
Self-Awareness	0.943	0.941	0.596
Self-Regulation	0.939	0.939	0.506
Social Skills	0.939	0.936	0.534
Emotional Intelligence	0.883	0.882	0.601

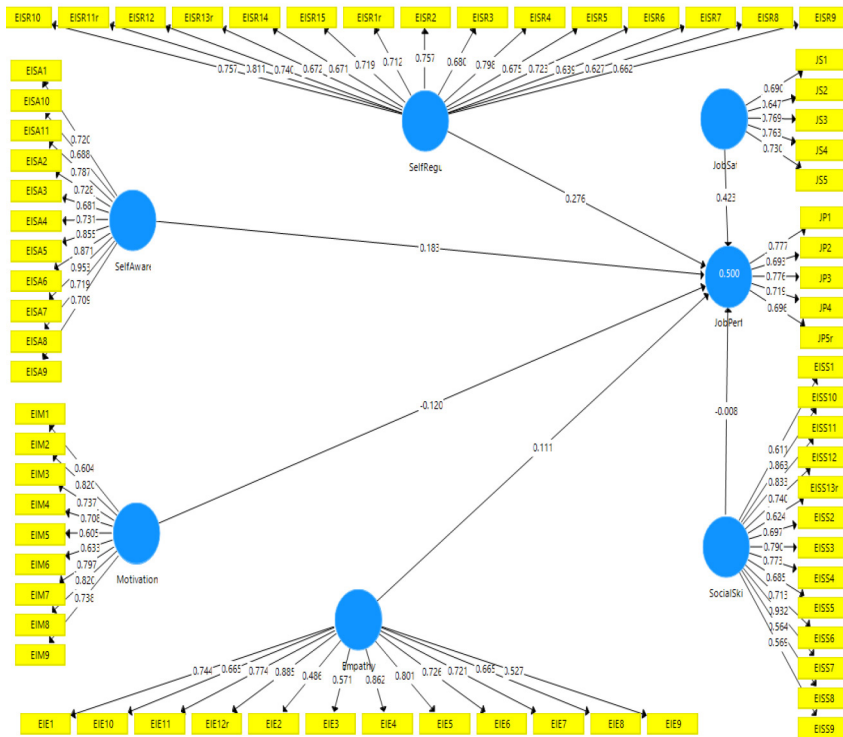


Figure 1: Measurement Model – LOC

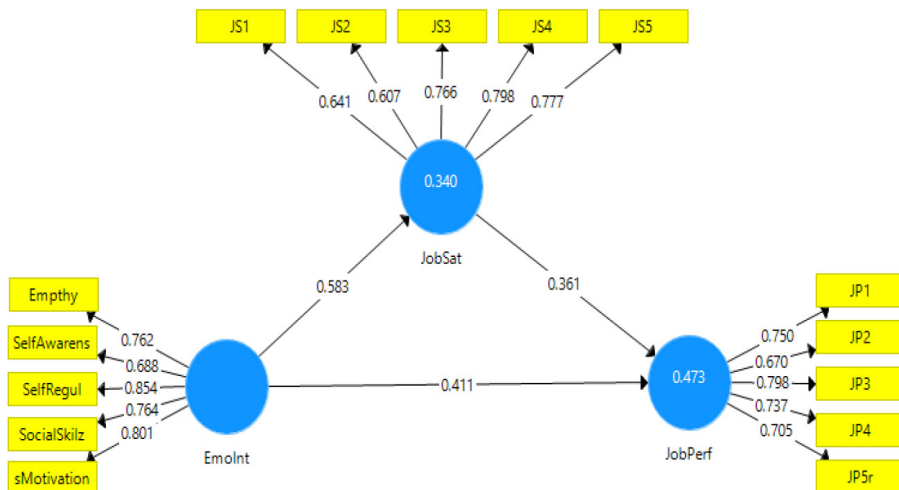


Figure 2: Measurement Model – HOC

Discriminant Validity

The study has examined the discriminant validity based on Fornell Larcher Criteria (1981) and cross-loading. The results presented in Table 7 show that “AVE square root values are greater than Pearson correlation values.” And Table 8 shows the measured cross-loading exceeds other variables, suggesting the latent variables are “unique and distinct” (Fornell & Larcher, 1981).

Table 7: Discriminant Validity

Variable	1	2	3	4	5	6	7
Self-Awareness	.772						
Self-Regulation	.546	.711					
Motivation	.500	.598	.722				
Empathy	.519	.518	.690	.713			
Social Skills	.487	.523	.674	.707	.731		
Job Satisfaction	.316	.425	.471	.406	.442	.721	
Job Performance	.360	.525	.412	.411	.404	.513	.733

Table 8: Cross Loadings – HOC

	Emotional Intelligence	Job Performance	Job Satisfaction
Empathy	0.762	0.466	0.452
Self-Awareness	0.688	0.490	0.334
Self-Regulation	0.854	0.561	0.465
Social-Skills	0.764	0.442	0.480
Motivation	0.801	0.450	0.518
JP1	0.498	0.750	0.416
JP2	0.442	0.670	0.375
JP3	0.472	0.798	0.505
JP4	0.439	0.737	0.464
JP5	0.428	0.705	0.435
JS1	0.343	0.416	0.641
JS2	0.329	0.389	0.607
JS3	0.443	0.464	0.766
JS4	0.485	0.459	0.798
JS5	0.481	0.438	0.777

Discriminant Validity (HTMT) Ratio

Many researchers suggest examining discriminant validity with the HTMT ratio, as Fornell and Larcher’s (1981) criterion has certain weaknesses. We have presented the results in Table 9, which shows that all the HTMT ratios are lesser than 0.85, reestablishing

discriminant validity (Risher & Hair, 2017).

Table 9: HTMT Ratios for Discriminant Validity – LOC & HOC

	EM	JP	JS	MT	SA	SR	SS	EI
Empathy								
Job Performance	0.470							
Job Satisfaction	0.457	0.601						
Motivation	0.751	0.469	0.535					
Self Awareness	0.629	0.500	0.338	0.584				
Self Regulation	0.556	0.579	0.474	0.643	0.654			
Social Skill	0.801	0.446	0.492	0.721	0.559	0.549		
Emotional Intelligence		0.622	0.575					

Quality of the Measurement Model

We measured the predictive power of the measurement model using “values of communality (Q^2). Results presented in Table 10 show that they are positive for all blocks, suggesting the measurement model has adequate predictive power (Hair et al., 2017).

Table 10: Quality Assessment of Measurement Model

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Empathy	4584.000	2366.368	0.484
Job Performance	1910.000	1067.813	0.441
Job Satisfaction	1910.000	1110.642	0.419
Motivation	3438.000	1824.985	0.469
Self-Awareness	4202.000	1846.123	0.561
Self-Regulation	5730.000	2949.851	0.485
Social Skills	4966.000	2445.958	0.507
Emotional Intelligence	1910.000	920.414	0.518

Structural Model Assessment

After examining the measurement model, the present study examined the structural model to underline the significance of the path coefficients (Hair et al., 2017). Smart PLS uses algorithms to evaluate the inner model and hypotheses, e.g., “PLS algorithm, bootstrapping, and blindfolding.” We have discussed the hypotheses results in the following sections.

Hypotheses Results

In Table 11, we have summarized the results related to the articulated hypotheses.

Table 11: Hypotheses Results

Path	Estimate	T Value	P Value	Results
SA→JP (H1)	0.182	2.371	0.018	Accepted
SS →JP (H2)	-0.007	0.079	0.937	Rejected
Motivation→ JP(H3)	0.120	1.343	0.160	Rejected
Empathy → JP(H4)	0.111	1.126	0.255	Rejected
SR → JP (H5)	0.276	3.397	0.001	Accepted
EI → JP (H6)	0.411	5.065	0.000	Accepted
EI → JS (H7)	0.583	11.032	0.000	Accepted
JS → JP (H8)	0.361	4.261	0.000	Accepted
EI → JS → JP(H9)	0.210	4.397	0.000	Accepted

We accepted Hypothesis 1, which states: “self-awareness positively affects job performance” ($\beta = 0.182$, $t=2.371$, $p < .05$). The study rejected Hypothesis 2, stating “social skill positively affects job performance” ($\beta = -0.007$, $t=0.079$, $p > .05$). We rejected Hypothesis 3, stating “motivation positively affects job performance” ($\beta = 0.120$, $t=1.343$, $p > .05$). The study rejected Hypothesis 4, stating “empathy positively affects job satisfaction” ($\beta = 0.111$, $t=1.126$, $p > .05$). The study accepted Hypothesis 5, stating “self-regulation positively affects performance” ($\beta = 0.276$, $t=3.397$, $p < .05$). The study accepted Hypothesis 6, stating “emotional intelligence positively affects job performance” ($\beta = 0.411$, $t=5.065$, $p < .05$). The study accepted Hypothesis 7 stating “emotional intelligence positively affects job performance” ($\beta = 0.583$, $t=11.032$, $p < .05$). The study accepted Hypothesis 8, stating “job satisfaction positively affects job performance” ($\beta = 0.361$, $t=4.261$, $p < .05$). The study accepted hypothesis 9, stating “job satisfaction mediates emotional intelligence and job performance” ($\beta = 0.210$, $t=4.397$, $p < .05$).

Mediation Analysis

We followed Baron and Kenny (1986) to test our mediation analysis. As shown in Table 11, all paths were significant, yet after the addition of mediator, the impact of emotional intelligence on job performance ($\beta = .412$) was significantly reduced ($\beta = .210$). Such a reduction in the impact of the independent variable is a sufficient condition for the occurrence of mediation. The total impact of emotional intelligence on job performance was .622, suggesting that job satisfaction mediates 62.20% of the total effect (Baron & Kenny, 1980).

To further confirm our mediation, we utilized Sobel’s (1982) test, which showed that JS significantly mediated the path between EI and JP ($z = 3.97$, $p < .001$). Hence hypothesis 9 was also approved (Sobel, 1982)

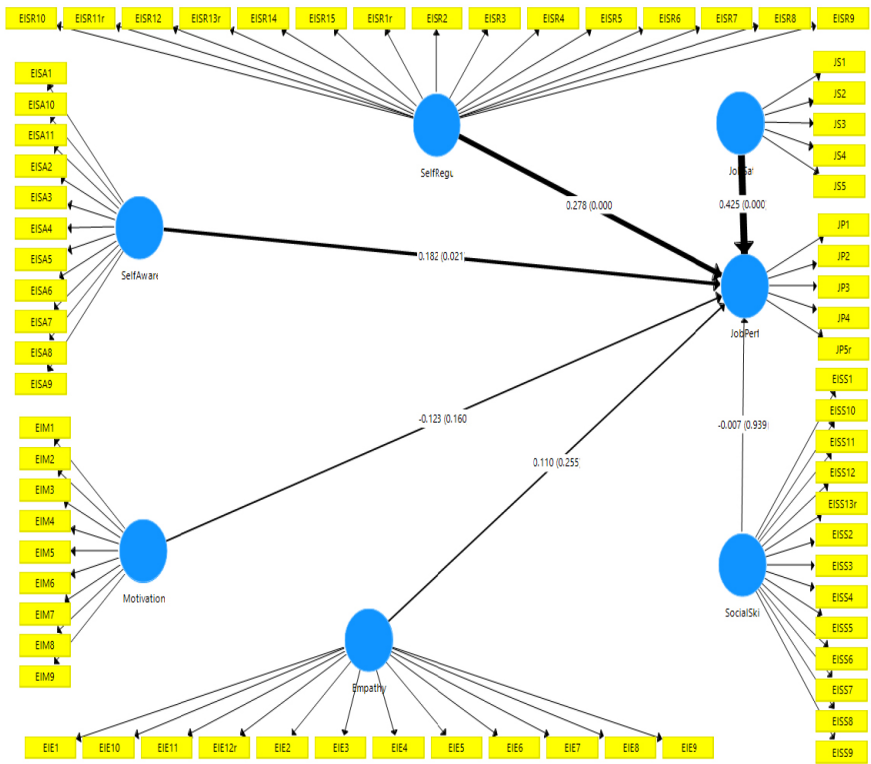


Figure 3. Structural Model – LOC

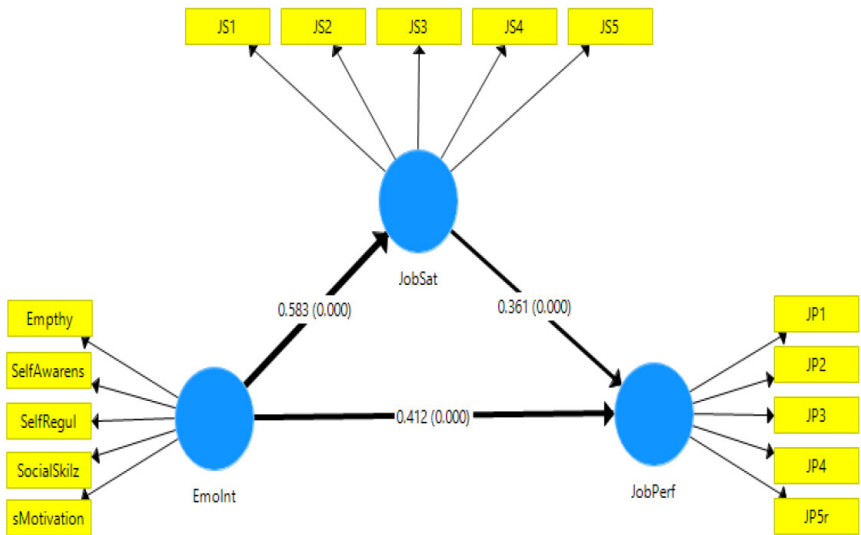


Figure 4. Structural Model – HOC

Discussion and Conclusion

Discussion

This study examined the effect of “self-awareness, social skills, motivation, empathy, self-regulation, emotional intelligence, and job satisfaction” on job performance. It also examined the mediating role of “job satisfaction on emotional intelligence and job performance.” We achieve the study’s objectives by developing and empirically testing the articulated hypotheses.

The study found “self-awareness positively affects job performance.” Huggins et al. (2021) argue that self-aware individuals are more stable and regular, which promotes positive attitudes toward work and other job-related outcomes. Extant literature documents that self-awareness positively correlates with workplace and employees’ health and well-being (Hall, Garabiles, & Latkin, 2019). Self-awareness has negative and positive connotations (Adil & Kamal, 2020). Individuals with negative self-perception focus on “negative emotions, depression, mood, weakness.” Consequently, it becomes a hurdle in solving social problems (Gopinath, 2020). At the same time, positive self-awareness promotes “in-depth self-awareness and desire for self-improvement.” Carden, Jones, and Passmore (2022) assert that both affect job performance. Many past studies document that job performance and satisfaction outcomes stem from self-awareness (Kim, Schuh, & Cai, 2020; Budworth and Chummar, 2022).

Contrary to past studies, the study found that “social skills insignificantly affect job performance.” Researchers assert that social skill is critical to managing and regulating employees apart from emotional intelligence (Idris et al. 2022). Zaman et al. (2019) assert that managers lacking social skills may be unable to collaborate with the workers and may not manage the team effectively. Researchers believe social skills include “survival and interpersonal skills” necessary for conflict resolution (Spade, 2020). Survival skills relate to acquiring basic skills necessary for human survival. With this skill, business managers learn to manage employees efficiently in the business environment (Gentina, Chen & Yang, 2021). Managers in a business environment face different types of problems, which they can resolve if they possess problems solving skills. It also helps managers achieve organizational goals by managing and controlling employees efficiently (Sakellariou et al., 2021).

Motivation has stemmed from the word motive, which relates to “needs, desires, wants or drives within the persons” (Hajiali et al., 2022). The study documents that motivation insignificantly affects job performance, which is inconsistent with past studies. In the present era of globalization, businesses have to deal with internal and external

operating factors (Arif, Zainudin, & Hamid, 2019). Businesses can only survive on their ability to integrate employees' motivation and production factors, such as machines and materials (Riyanto, Endri, & Herlisha, 2021). Pancasila, Haryono, and Sulisty (2020) assert that firms with a team of highly motivated employees will be more productive in contributing toward profit and increased market share. Adetola et al. (2022) assert leaders inspire and help individuals to achieve their goals. Highly motivated employees are happier, more satisfied, and more productive and efficient (Luqman et al., 2020).

Contrary to past studies, we found "empathy insignificantly affects job performance." Leader-Member-Exchange (LMX) theory, developed in 1975, explains the interactions between leaders and subordinates (Jian, 2022). The theory postulates that employees with a low perception of the leaders will perform poorly (Arghode et al., 20220). At the same time, leaders with empathic behavior will command respect from their subordinates. Employees reciprocate such leaders by developing positive attitudes and behaviors towards work (Haynie et al., 2019). Lanier (2021) asserts that empathic leaders have positive emotions despite receiving negative feedback. Such leaders understand the emotions and feelings of the employees and listen to their problems. Good leaders have high ethical values that inspire and motivate employees to give good job performance (Tufail & Sandhu, 2022).

The study documents that "self-regulation positively affects job performance." Individuals, through self-regulation, manage and control their behavior at the workplace. Organizations' success and sustainability depend on creating an environment that enhances employees' self-regulation traits (Bakker & de-Vries, 2021). Bakker and Oerlemans, (2019) suggest that firms can improve employees' self-regulation by communicating their expectations regarding dress codes, language, and other behaviors. Employees must be encouraged to take initiative and responsibility (Wolters & Brady, 2021). Mitchell et al. (2019) assert that firms must promote a conducive environment for employees to communicate freely without fear and criticism. Such an environment correlates with self-regulation and job performance.

We found "emotional intelligence positively affects job performance," which aligns with past studies. Many past studies in different domains found that emotional intelligence enhances job performance (Miao, Humphrey, & Qian, (2021). Researchers believe that individuals with high emotional intelligence are higher achievers than others. Such individuals perpetually focus on learning and acquiring new knowledge (Gopinath & Chitra, 2020). Contrarily, individuals who lack open-mindedness are less resilient when facing problems (Suleman et al., 2020). Managers with high emotional intelligence delegate jobs based on individual capacity and capability, which enhances

employees' motivation and job performance.

Our results support the hypothesis stating "emotional intelligence positively affects job satisfaction." Emotional intelligent individuals have the knack for assessing and regulating employees' "feelings, frustration, and stress," resulting in positive job satisfaction (Mérida-López et al. (2022). Jufrizen, Nadia, and Muslih (2022) stress that emotionally intelligent individuals are more resilient as they can identify the root cause of stress and develop strategies to reduce it. At the same time, individuals with low emotional intelligence lack awareness of their own and other emotions, so they cannot reduce stress and increase job satisfaction.

The study found "job satisfaction promotes job performance." Past studies examined the association between job satisfaction and performance in different domains and sectors and found inconclusive results (Jufrizen, Nadia, & Muslih, 2022). Researchers believe job satisfaction and performance have bidirectional relationships. That is, job satisfaction affects performance, and performance stimulates job satisfaction (Winton, 2022). It thus has a direct and indirect association with job satisfaction and performance (Hwang & Park, 2022).

The study has validated the "mediating effect of job satisfaction between emotional intelligence and job performance." Many factors, including "personal life to organization culture, job content, and tasks, manager's attitude financial reward," contributes towards job performance (Hwang & Park, 2022). Schlaegel, Engle, and Lang (2022) assert that promotions, salary, and growth affect job satisfaction leading to increased performance. However, employees' job performance levels may change due to their psychological state and mood (Kessi et al., 2022). O'Boyle & Ernst (2011), based on meta-analysis, found that emotional intelligence significantly affects job performance. Researchers believe job satisfaction aligns with "withdrawal behavior, intention to quit, turnover, and organizational commitment" (Rogowska & Meres, 2022).

Conclusion

The study examined the impact of "self-awareness, social skills, motivation, empathy, self-regulation, and job satisfaction on job performance" in SMEs in Karachi. The study non-randomly collected a sample of 382. The study found "self-awareness, self-regulation, emotional intelligence, and job satisfaction positively affect job performance." The study also found "emotional intelligence affects job satisfaction, and job satisfaction mediates emotional intelligence and job performance." However, "social skills, motivation, and empathy" insignificantly affect job performance.

Limitations of the Study

This study has used a cross-sectional design that has a certain inherent limitation. Therefore we advise others to use a cross-sectional design as it brings more insight into the phenomenon. The study has focused on SMEs in Karachi. Future researchers can extend their studies to other cities and other domains. The study has examined the mediating effect of job satisfaction, and other researchers may use variables such as work-life balance and emotional labor as mediators. Cultural values affect attitudes toward work, which other studies may incorporate in their studies. Income levels, experience, and age affect job-related outcomes differently, which other studies can use as moderators.

Practical Recommendations

The results suggest that emotional intelligence and job satisfaction affect job performance in SMEs in Karachi. Thus, firms must offer intrinsic and extrinsic rewards to enhance employee satisfaction. Such measure is necessary for the growth and sustainability of the organization. Emotional intelligence helps understand and manage others' emotions and solve problematic issues. Therefore, firms must arrange seminars and workshops on emotional intelligence for their employees regularly. Although we did not find a significant effect of social skills and empathy on job performance, they still are an important precursor to job-related outcomes, and firms must focus on these aspects as well.

Annexure 1

Constructs and Items Used in the Questionnaire

Motivation

1. The relations with colleagues affect motivation.
2. Authority/responsibility and dependence in the workplace affect motivation.
3. Participation in the decision-making process affects motivation.
4. The match between overtime hours and lifestyles affects motivation.
5. The holiday, off-day, and resting periods and their match with the lifestyle affect motivation.
6. Working period affects motivation.

Job Performance

1. I efficiently complete assigned duties.
2. I responsively complete assignments related to my job description.
3. I complete all tasks beyond the supervisor's expectations.
4. I always volunteer for challenging assignments.
5. I engage in activities that affect my performance.

Social Skills

1. I ask my supervisor for help when other employees push me around.
2. I listen to my supervisor when they are talking with me.
3. I ask for permission before touching other people's things.
4. I keep my desk clean and neat.
5. I ignore employees who are clowning around.
6. When I'm interested in someone, I invite him (her) for a date.
7. I use my free time in a good way.
8. I use a nice tone of voice in discussions.
9. I ask my friends for help with my problems.

Empathy

1. When someone else is feeling excited, I tend to get excited too.
2. Other people's misfortunes do not disturb me a great deal.
3. It upsets me to see someone being treated disrespectfully.
4. I remain unaffected when someone close to me is happy.
5. I enjoy making other people feel better.
6. I have sympathy for people less fortunate than me.
7. When a friend starts to talk about his/her problems, I try to steer the conversation toward something else
8. I can tell when others are sad, even when they say nothing.
9. I am "in tune" with other people's moods.
10. I do not feel sympathy for people who cause serious illnesses.

11. I become irritated when someone cries.
12. I am not interested in how other people feel.
13. I get a strong urge to help when I see someone upset.
14. When I see someone being treated unfairly, I do not feel very much pity for them.
15. I find it silly for people to cry out of happiness.
16. When I see someone being taken advantage of, I feel protective towards him/her.

Job Satisfaction

1. I receive recognition for a job well done.
2. I feel close to the people at work.
3. I feel good about working at this company.
4. I feel secure about my job.
5. I believe management is concerned about me.
6. On the whole, I believe work is good for my physical health.
7. My wages are good.
8. All my talents and skills are used at work.
9. I get along with my supervisors.
10. I feel good about my job.

Self-Regulation

1. Once I have a goal, I can usually plan how to reach it.
2. I set goals for myself and keep track of my progress.
3. When I'm trying to change something, I pay attention to how I'm doing.
4. I have personal standards and try to live up to them.
5. I have a lot of willpower.
6. I'm able to accomplish the goals I set for myself.
7. If I resolve to change something, I pay much attention to how I'm doing.
8. If I wanted to change, I was confident I could do it.
9. I usually keep track of my progress toward my goals.
10. I usually think before I act.
11. I start looking for possible solutions when I see a problem or challenge.
12. When deciding about a change, I feel overwhelmed by the choices.
13. I learn from my mistakes.
14. I can resist temptation.
15. I can stick to a plan that is working well.

Self-Awareness

1. I generally feel positive about self-awareness.
2. I reassess my own and others' responsibilities.
3. I'm aware of my abilities and limitations.
4. I am reflective.

- 5. I am realistic about myself.
 - 6. I have a good self-image
 - 7. I feel comfortable the way I am.
 - 8. I have fun.
 - 9. I am consistent in different situations or with different people.
 - 10. I have compassion and acceptance for others.
 - 11. I interact well with colleagues or peers.
 - 12. I understand myself well.
 - 13. I am confident.
 - 14. I stop and think before judging.
 - 15. I understand my emotions.
 - 16. I am objective.
 - 17. I see my work life as something I have the power to affect.
 - 18. I can "take a step back" from situations to understand them better.
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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

A Study on BI System: A Moderating Role of Organizational Learning

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Abstract

Organizational performance significantly depends on business intelligence. Business intelligence (BI) converts raw data into meaningful and useful information that managers use to make quick and improved assessments. Before implementing business intelligence in their firms, the manager must thoroughly evaluate it. Absorptive capacity (ACAP) and BI systems are closely related. We assessed the impact of the sub-dimensions of ACAP “acquisition, assimilation, transformation, and exploitation” on BI, Impact of BI on firm performance, and the moderating role of organizational learning. We adopted the quantitative method that comprises gathering secondary data from middle managers in Karachi’s banking industry and analyzing the data using partial least squares-structural equation modeling (PLS-SEM). The study found the dimensions of ACAP “acquisition, assimilation, transformation, and exploitation” positively affect the BI system. The BI system promotes firm performance. We also found organizational learning insignificantly moderates BI and firm performance. Managers can use the model to determine which areas of their company need more development before making the major financial commitment toward the BI system and to determine whether their company is ready to adopt it.

Keywords: *Business intelligence system, absorptive capacity, acquisition, assimilation, transformation, exploitation, and firm performance.*

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Introduction

A business intelligence system is a tool for acquiring, storing, analyzing, and refining data that support decision-making (Buhasho, Wausi, & Njihia, 2020). Technology has improved considerably in the last few years, allowing organizations to handle large quantum of data available in various forms, like images, web pages, and graphs (Zhang & Chen, 2020). Businesses generate and use a large volume of data which earlier technology could not handle (Cheng, Zhong, & Cao, 2020). Consequently, researchers' and practitioners' interest in business intelligence has increased profoundly (Lee, Cheang, & Moslehpour, 2022). Al-Eisawi, Serrano, and Koulouri (2020) investigated the influence of absorptive capacity on the efficiency of business intelligence systems and organizations. Based on a sample of 150 respondents, the study found a significant association between "acquisition, assimilation, transformation, and exploitation" and the efficiency of the BI system. Another research examined the association between business intelligence, business analytics usage, ambidexterity, and firm performance. Based on 500 web respondents, the study found that utilization of business analytics positively correlates with explorative and exploitative balancing efforts, consequently improving a firm's performance. The study also found that absorptive capacity mediates the association between business intelligence and ambidexterity (Božić & Dimovski 2019).

Additionally, Abusweilem and Abualoush (2019) investigated the relationships between knowledge management process organizations' business intelligence and firm performance. The study collected a sample of 126 respondents from Jordan's Housing Bank branches in Irbid. The study documented that knowledge management processes and organizational performance are significantly correlated. Another study in joint venture banks in Alexandria examined the impact of business intelligence on organizational agility and the mediating role of absorptive capacity. Based on a sample of 228 respondents, the study found organizational business intelligence promotes organizational agility, but technological business intelligence insignificantly affects organizational agility. In addition, the study found that absorptive capacity mediates business intelligence and organizational agility (Aly, Youssef, Matar & Hayder, 2021). Hooi (2021) investigated the organizational learning capability of Malaysian Retailers-Chain members and found benefits, rewards, empowerment, and teamwork significantly affect organizational performance. The study also found organizational commitment, experimentation, and openness positively affect organizational learning. Another study examined the impact of entrepreneurial orientation on firm performance using entrepreneurial orientation as a mediator. The study collected a sample of 250 Pakistani software engineers. The study found that entrepreneurial orientation positively affects job performance and mediates organizational learning and job performance (Hina,

Hassan, Parveen, & Arooj, 2021).

The above discussion shows that a few studies have examined the absorptive capacity sub-dimensions’ effect on business intelligence. Many past studies have used ACAP as a mediator, but insignificant studies have used organizational learning as a moderator between business intelligence systems and firm performance. Given these gaps, this study examines (i) the effect of absorptive capacity determinants on the business intelligence system, (ii) the impact of BI on firm performance, (iii) The mediating role of the business intelligence system, (iv) the moderating role of organizational learning.

Theories Underpinning and Conceptual Framework

We have extended Peppard and Ward’s (2004) Information Systems Capability (ISC) Theory and Fiol and Lyles’ (1985) Organizational Learning Theory (OLT) to develop the conceptual framework of the study. Information System Theory emphasizes a company can gain a competitive advantage by “integrating, assimilating, appraising, and rearranging assets.”Consequently, it improves the business intelligence system. Popescu, Valaskova, and Horak (2022) assert that firms can align business intelligence with current organizational architecture to generate additional opportunities (complimentary). Rana et al. (2022) assert that dynamic complementary partnerships are multi-facets. Therefore it is difficult for other companies to replicate them. According to the OLT, evaluating activities and procedures helps attain the defined goals. Thus, organization leaders should perpetually change the organizational BI System to align it with real-world outcomes (Elkjaer, 2022). Based on the above discussions, we have developed a conceptual framework, depicted in Figure 1.

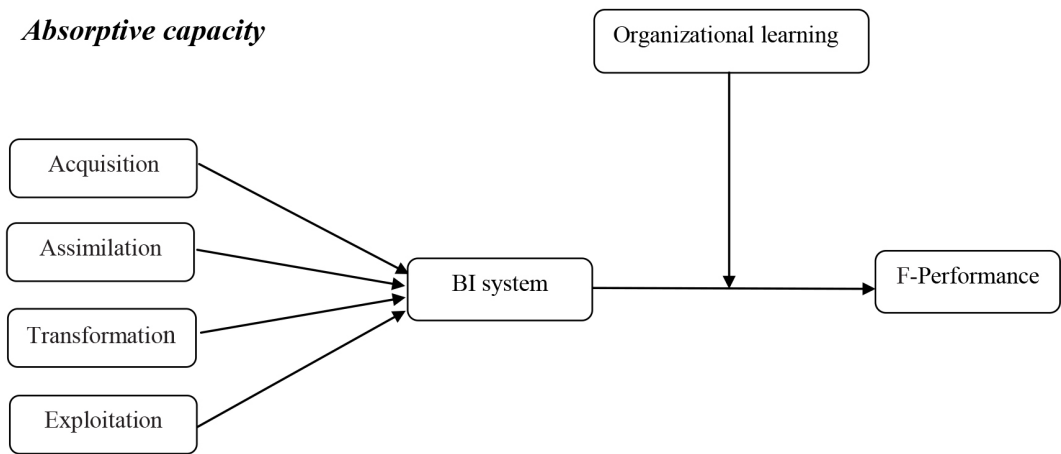


Figure 1: Conceptual Framework

Hypothesis Development

In the following section, we have presented theoretical support for the articulated hypotheses.

Acquisition

The acquisition dimension of ACAP allows organizations to recognize and acquire external knowledge for growth and sustainability (Elbashir et al., 2022). Extant literature suggests that firms must invest in R & D to acquire knowledge and make business intelligence systems effective (Chatterjee, Chaudhuri, & Vrontis, 2022). Knowledge acquisition in a firm depends on “intensity, speed, and direction.” Thus, intensity and speed are important to recognize and acquire the necessary knowledge for the ACAP and business intelligence system (Mehralian & Khazaei, 2022).

H1. The acquisition positively affects the BI system.

Assimilation

The assimilation dimension of ACAP refers to the analysis, processing, and interpretation of routine external information acquired from external sources. This dimension is crucial for the effectiveness of business intelligence systems (Cho et al., 2023). Many researchers believe it is difficult for firms to assimilate and implement external knowledge into business intelligence systems. Therefore, the firms must develop the capacity to “assimilate, integrate and implement external knowledge” into business intelligence systems (Du & Wang, 2022). Crupi et al. (2022) assert that external knowledge, apart from being difficult to comprehend, may not align with the firm’s business structure and process. The misalignment between external knowledge and firms’ business structure may delay the assimilation of external knowledge into business intelligence systems. However, external knowledge, apart from delay in understanding and implementation, may bring new insight to improve the working environment and business intelligence system (Knoppen, Saris, & Moncagatta, 2022).

H2. The assimilation positively affects the BI system.

Transformation

Transformation is another dimension of ACAP. It refers to the capability of organizations to refine their current routine by combining newly acquired knowledge (Ahmed et al., 2020). Dzhengiz and Niesten (2020) assert that the transformation process is refining existing knowledge by deleting irrelevant aspects of knowledge and adding new knowledge to enhance the business intelligence system. In the transformation process, firms face problems when a new idea generates two dependable but incompatible settings of resources. Therefore, firms must develop the capacity to use two or more inconsistent

pieces of information (Xue, Boadu, & Xie, 2019). Kale, Aknar, and Başar (2019) assert that transformation links with strategic change in an organization. Strategic change or transformation refers to changing common organizational knowledge constructively and positively. Khan, Majid, and Yasir (2021) assert that organizational transformation promotes “growth and sustainability.”

H3: The transformation positively affects the BI system.

Exploitation

Exploitation is also an important dimension of ACAP. A successful firm can exploit knowledge by integrating it into its business process with little or no technical problems. It allows the organization to “refine and enhance existing capabilities” (Chichkanov, 2021). Khan, Lew, and Marinova (2019) assert that exploitation is the “formation of new services, products, systems, and knowledge.” While developing a new project, firms with good exploitation capabilities acquire knowledge from different resources, including competitors, customers, and the market (Qin et al., 2020). Additionally, such organizations integrate existing and new knowledge to reposition their target market with improved creative value propositions (Knoppen, Saris, & Moncagatta, 2022).

H4: The exploitation positively affects the BI system.

BI and Organizational Performance

The purpose of business intelligence is to support a company by converting data into usable knowledge and information (Paulino, 2022). It enables companies to access, evaluate, and share information and knowledge to enhance organizational performance (Popovič, Puklavec, & Oliveira, 2019). Managers can make better decisions and successfully run the business using new knowledge (Maroufkhani et al., 2019). BI provides the necessary information to firms to increase their performance.

BI goes beyond policy and database sharing. It includes the active participation of all employees by sharing their experiences and knowledge with others (Caseiro & Coelho, 2019). The BI system has various regulatory benefits (Talaoui & Kohtamäki, 2021). Paulino (2022) asserts that organizations develop effective market strategies by optimizing and exploiting their existing resources (Wamba-Taguimdje et al., 2020). BI is a critical competitive tool, and it helps firms to identify new market segments and cater to their needs with new innovative products. The BI system can store, analyze, and retrieve large amounts of data, which firms can use to develop new products, streamline procedures, or learn from competitors’ research. As a result, BI improves an organization’s performance (Yiu, Yeung, & Cheng, 2021).

Firms' ability to develop new knowledge by exploiting existing knowledge is important for growth and sustainability (Bordeleau et al., 2020). BI is extremely useful for learning about the competitive environment, including market dynamics, governmental restrictions, emerging technology, and competitors (Nithya & Kiruthika, 2021). It is also useful to anticipate the changes in the environment in which the company functions (Bag et al., 2021).

H5. Business intelligence systems positively affect organizational performance.

Organizational Learning and Organizational Performance

Strong organizational learning boosts business performance by nurturing and utilizing knowledge to achieve organizational objectives (Khan, Zhang, & Salik, 2020). It increases innovation and creativity by developing new tools and capacities to cater to the demand of anticipated change (Oh, 2019). Organizational learning makes firms more successful, competitive, and inventive (Waruwu et al., 2020). Extant literature documents organizational learning improves firm performance (Putra et al., 2020). A learning organization provides learning material to the employees and encourages them to change their attitudes and behaviors according to the new requirements (Hosseini et al., 2020). Past studies document that employees must unlearn old procedures to adopt new changes (Lin & Huang, 2021). Also, empowering employees is necessary to implement new changes.

Organizational learning enables firms to cope with external challenges by adopting novel ideas and taking calculated risks. All these aspects improve organizational performance (Antunes & Pinheiro, 2020). Abbas et al. (2020) and Oh (2019) assert that external knowledge gathered through organizational learning helps businesses explore innovative opportunities, recognize client choices, foster innovation, and enhance performance. Rafiki et al. (2023) assert that organizational learning is a precursor of organizational performance.

H6. Organizational learning moderates the relationship between BI and organizational performance.

Methodology

Population and Sampling

The current study is quantitative. The study distributed 250 questionnaires to the middle managers working in the banking sector in Karachi, Pakistan, and received 210. We found that 61% of respondents were females and 39% were males. Regarding age,

we found that 28% of the employees were in the age bracket of 20-30, 66% in the age bracket of 31-40, 3.2% in 41-50 age bracket, and the remaining were above 51 years old. We found that 18% have Bachelor's degrees, 46% have Master's Degrees, and 31% have MS/M. Phil's level of education and the rest have diplomas or certifications. In terms of experience, we found that 53% of employees have up to five years of experience, 12% have experience 6 to 10 years, 14% have experience between 11 to 15 years, and the rest have an experience of at least 16 years or more.

Scales and Measures

The study has seven constructs and 44 items adopted from earlier studies. Table 1 shows the names of constructs, sources, reliability in earlier studies, and the number of indicators in the latent variables.

Table 1: Scale and Measures

Constructs	Sources	Reliability	Items
Acquisition	Al-Eisawi et al (2020)	0.821	7
Assimilation	Al-Eisawi et al (2020)	0.800	5
Transformation	Al-Eisawi et al (2020)	0.778	3
Exploitation	Al-Eisawi et al (2020)	0.819	4
Business intelligence	Al-Eisawi et al (2020)	0.808	10
Firm performance	Hina et al. (2021)	0.864	4
Organizational learning	Hina et al. (2021)	0.890	11

Statistical Analysis

This study used partial least squares-structural equation modeling (PLS-SEM). It includes “generating measurement models, reliability and validity statistics, and a structural model for hypotheses results.”

Results and Findings

Descriptive Analysis

In Table 2, we have presented the results related to descriptive analysis.

Table 2: Descriptive Statistic

	Cronbach's Alpha	Mean	SD	Skewness	Kurtosis
Acquisition	.985	3.879	1.912	-.011	-1.737
Assimilation	.887	3.851	1.052	.179	-1.747
Transformation	.896	3.710	1.918	-.075	-1.667
Exploitation	.868	4.206	0.987	.042	-1.823

Business Intelligence	.879	3.510	0.968	-.171	-1.670
Firm Performance	.815	3.993	1.260	-.005	-1.570
Organizational Learning	.865	3.959	1.840	-.136	-1.731

The findings reveal that “Cronbach’s Alpha values” fall between 0.815 to 0.985. Firm performance has the lowest value ($\alpha=0.815$, Mean=3.993, SD=1.260), and acquisition has the highest value ($\alpha=0.985$, Mean=3.879, SD=1.912). The values of Skewness and Kurtosis are between ± 2.5 . Therefore, we can conclude that the study’s constructs adhere to the univariate normality and internal consistency requirements (Hair et al., 2017).

Convergent Validity

Assessment of convergent discriminant validities is essential for a study. Table 3 summarizes these results.

Table 3: Validity Analysis

	CR	AVE	Acq	Ass	BI	Exp	FP	O.L.	Trans
Acquisition	0.918	0.616	0.785						
Assimilation	0.918	0.691	0.469	0.832					
Business Intelligence	0.909	0.625	0.617	0.544	0.791				
Exploitation	0.891	0.671	0.669	0.617	0.731	0.819			
Firm Performance	0.880	0.647	0.518	0.307	0.661	0.458	0.804		
Organizational Learning	0.904	0.652	0.689	0.449	0.786	0.572	0.497	0.808	
Transformation	0.911	0.773	0.674	0.474	0.733	0.736	0.624	0.640	0.879

The “factor loadings of all retained items are more than 0.65” All-composite values are higher than 0.70, as recommended by (Kock, 2017), and AVE values are higher than 0.60, as recommended by Hair Jr et al. (2017), suggesting the results meet the criteria for convergent validity. Considering that “AVE squared values are greater than Pearson correlation values,” we have deduced that each construct is “unique and distinct” (Fornell & Larcker, 1981).

Measurement Model’s R Square and Q Square Values

We used R^2 and Q^2 values presented in Table 4 to assess the model’s predictive power. According to Hair et al. (2010), the model has an appropriate “predictive capacity” because the “ R^2 values are larger than 0.10 and the Q^2 values are greater than zero” (Hair et. al., 2017).

Table 4: Measurement Model (Predictive Power-R² and Q²)

	R ²	Adjusted-R ²	Q2 (=1-SSE/SSO)
Business Intelligence	0.686	0.680	0.417
Firm Performance	0.438	0.430	0.274

Measurement Model's Fit Indices

The "fit indices" values in Table 5 show that the model fits well, with "SRMR values less than 0.08 and NFI values greater than 0.70" (Hair et al., 2022).

Table 5: Measurement Model's Fit Indices

	Saturated Model	Estimated Model
SRMR	0.065	0.074
d_ULS	2.535	3.273
d_G	1.304	1.390
Chi-Square	1418.795	1490.737
NFI	0.835	0.822

Hypotheses Results

The study tested five direct and one moderator hypotheses. Table 6 displays the summary. And we have presented the "Measurement and Structural Models" in Figures 2 and 3, respectively.

Table 6: Hypotheses Results

	Beta	T-Stats	P Value	Results
Acquisition → Business intelligence (H1)	0.345	4.321	0.000	Accepted
Assimilation → Business intelligence (H2)	0.109	1.797	0.073	Accepted
Transformation → Business intelligence (H3)	0.284	3.306	0.001	Accepted
Exploitation → Business intelligence (H4)	0.224	2.216	0.027	Accepted
Business Intelligence → Firm Performance (H5)	0.708	9.101	0.000	Accepted
Moderating Effect Org. Learning → Firm Performance (H6)	0.012	0.165	0.509	Rejected

The study supports five direct hypotheses and does not support the moderating hypothesis. We found the highest impact between "business intelligence and organizational performance" ($\beta=0.708$). While the smallest was between "assimilation and business intelligence system" ($\beta=0.109$).

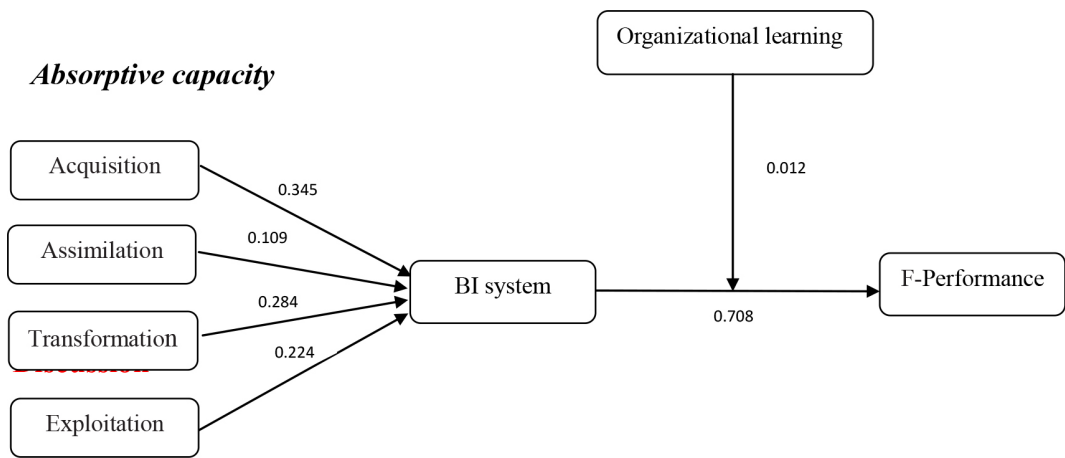


Figure 2: Measurement Model

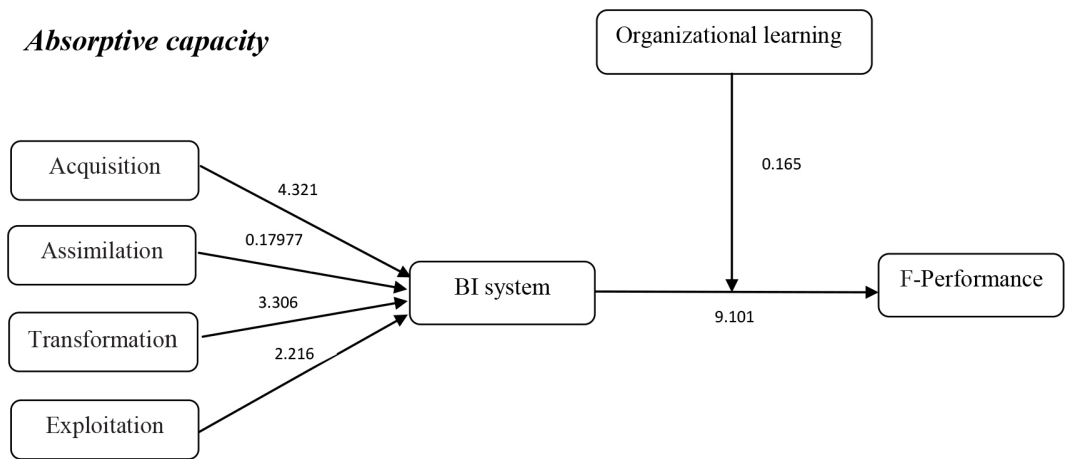


Figure 3: Structural Model

The study's findings validate that ACAP dimensions enhance the value of BI systems (Al-Eisawi et al., 2020; Chatterjee, Chaudhuri, & Vrontis, 2022). To increase the efficiency of the BI system, firms must focus on the four components of absorptive capacity, i.e., "acquisition, assimilation, transformation, and exploitation."

The study supported the effect of "acquisition on BI system." All of the examined measures of the acquisition dimensions offer a plausible potential benefit for enhancing data acquisition within businesses (Knoppen, Saris, & Moncagatta, 2022). Elbashir et al. (2022) assert acquisition of knowledge generates positive knowledge-sharing

interaction that positively affects the BI system.

The study found "Assimilation dimension positively affects the BI system." Many researchers believe it is difficult for firms to assimilate and implement external knowledge. Therefore, the firms must develop the capacity to assimilate, integrate and implement external knowledge into the BI systems. (Al-Eisawi et al., 2020).

We found "the transformation dimension positively affects BI systems." The ability of the organization to apply a series of modifications to its current practices and acquired knowledge can increase the effectiveness of the business intelligence system (Ahmed et al., 2020).

Al-Eisawi et al. (2020) assert that exploitation is an institutional capability built on methods and practices. It allows organizations to develop, disseminate, and enhance existing capabilities or generate new distinct ones by incorporating acquired and transformed knowledge into their operations. The study found that "exploitation positively affects the BI system."

The study found "BI system promotes organizational performance." The findings validate the works of many past studies that came up with the same conclusion (Khan et al., 2020; Buhasho, Wausi, & Njihia, 2020). Business intelligence technologies can help businesses perform better. However, the business must generate a thorough plan before implementing business intelligence. Businesses must deal with change management because they are dynamic (Khan et al., 2020).

We found that "organizational learning insignificantly moderates business intelligence and organizational performance," which aligns with the findings of Abbas et al. (2020).

Conclusion

Business intelligence problems affect the service sector, particularly the banking sector. Thus, we collected a sample of 210 respondents from the local banking sector using pen and pencil questionnaires. The study found that all four dimensions of absorptive capacity, i.e., "Acquisition, assimilation, transformation, and exploitation," positively affect the business intelligence system. Business intelligence also promotes organizational performance. Organizational learning insignificantly moderates business intelligence and firm performance.

Practical Implications

Our research has important real-world implications for managers interested in BI

adoption. Cheng, Zhong, and Cao (2020) assert that most organizations struggle to make sense of the data and insights that BI brings. The companies that successfully use BI are more of an exception than a norm. If researchers want to translate the usage of BI to increase business performance, they should concentrate on increasing BI-supported innovation skills. Organizations should use absorptive capacity dimensions more frequently to increase BI systems' efficiency.

Limitations and Future Research

The sample size for this study was small, and it focused on the banking sector. Other researchers may focus on other sectors and collect a larger sample size. We have focused on middle-level management; others may collect the data from lower management levels. Organizations at different stages of implementing business intelligence may have different attitudes, which future researchers may consider. We have used organizational learning as a moderator, and future studies may use other variables, such as spirituality and ethics as moderators.

Annexure -1

Constructs and Items used in the Questionnaire

Business Intelligence

- BI1. BI systems improve data collection from different systems resources using BI technical tools.
- BI2. Using the BI system and BI technical tools increase employee productivity in my organization.
- BI3. The BI system improve data collection from different systems resources.
- BI4. BI systems enhance coordination between partners, suppliers, and our organization internally.
- BI5. BI systems lower the cost of transactions with business partners/suppliers and data providers.
- BI6. BI System improve data processing and storage using data warehouse and OLAP online analytical processing tools.
- BI7. BI systems improve the efficiency of internal processes.
- BI8. BI systems in my organization has lower operational costs.
- BI9. BI systems reduce the time and cost-to-market of products/services.
- BI10. BI systems reduce the cost of effective decision-making.

Firm Performance

- FP1. My firm is usually satisfied with the return on investment.
- FP2. My firm is usually satisfied with the return on equity.
- FP3. My firm is usually satisfied with the return on assets.
- FP4. My firm is usually satisfied with market share growth.

Organizational Learning

- OL1. Individuals generate many new insights in my firm.
- OL2. Individuals in my firm take experimental actions.
- OL3. Individuals in my firm are motivated to carry out assigned tasks.
- PL6. Individuals in my firm are aware of critical issues that affect their work.
- OL7. Our organization value group gives output.
- OL8. We have effective conflict resolution when working in groups.
- OL9. Different points of view are encouraged in group work in my firm.
- OL10. Lessons learned from one group are shared by other groups in my firm.
- OL11. Our organizational structure results from what we learn.
- OL10. Our cultural values are a result of our different ideas in my firm.
- O11. Group resolutions are used to improve the firm production/service delivery process.

Absorptive Capacity

Acquisition

- AC1. Management support for data exchange exists in my organization.
- AC2. Departmental data management exists in my organization.
- AC3. There is support for well-established relations with data providers.
- AC4. Research development activates, and investments exist in my organization.
- AC5. Periodical meetings and workshops with experts occur in my organization.
- AC6. Human resource competencies are highly encouraged.

AC7. My organization allocates financial budgets and supports different initiatives for data exchange purposes.

Assimilation

AS1. Timely data flow is organized and noticeable in my organization.

AS2. Well-established development exchange meetings occur in my organization.

AS3. Departmental employee communication occurs in my organization.

AS4. In my organization, employees have a degree of literacy regarding acquired data from other resources.

AS5. Technological readiness is apparent in employees in terms of data processing competencies.

Transformation

TR1. In my organization, there is adequate availability of technological infrastructure.

TR2. In my organization, employees' technical abilities and tendencies are highly present.

TR3. Robust and effective data security measures are implemented in my organization.

Exploitation

EX1. In my organization, there is an acceptable degree of quality decisions and decision-making.

EX2. In my organization, apparent innovative products and services are available.

EX3. We have prototype production support.

EX4. My organization always seeks the adoption of new technologies.

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Title: A Moderated Model: Task Ambiguity and Task Complexity Moderating Servant Leadership and Employees Turnover Intention

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

A Moderated Model: Task Ambiguity and Task Complexity Moderating Servant Leadership and Employees Turnover Intention

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Abstract

Apart from contributing towards GDP and employment generation, SMEs face the challenges of retaining talented employees. Besides other factors, the type of leadership, task ambiguity, and complexity affect employees' attitudes toward work and organizations. Given its importance, the study examines the effect of "servant leadership, task ambiguity, and complexity" on turnover intention. It also examines the moderating roles of "ambiguity and complexity on turnover intentions" in SMEs in Karachi. We collected a sample of 252 from local SMEs in Karachi. The study found servant leadership negatively affects turnover intention. Task ambiguity and task complexity positively affect turnover intention. Task ambiguity insignificantly moderates "servant leadership and turnover intention. Task complexity significantly moderate servant leadership and turnover intention. Due to a lack of job description and direction, employees often get confused, adversely affecting their motivation, well-being, and productivity. We suggest leaders delegate jobs by aligning employees' characteristics, skills, and job requirements. They must be clear about what they expect from the employees by communicating verbally and in writing. Firms must arrange seminars, workshops, and counseling sessions on leadership styles. Such sessions may improve leaders' attitudes and behaviors toward employees.

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Keywords: *Turnover intention, servant leadership, task ambiguity, task complexity, SMEs in Karachi.*

Introduction

To compete in the present era, firms must be “sustainable, proactive, and visionary.” Employees are the firms’ assets (Kucharska & Kowalczyk, 2019). Therefore, firms must ensure employees are satisfied and have low turnover intentions (Murray & Holmes, 2021). High turnover adversely affects the employees’ morale and increases their intentions to look for new jobs. Another reason for spending resources on existing employees is hiring a new employee is more expensive than retaining the existing one (Tinwala & Biswas, 2020). The average turnover in Asian countries and developed countries in 2015 was 55%, which has increased to 70% by 2019 (Guo et al., 2019).

Extant literature suggests a servant leadership style is important as it aligns employees and organizational values (Westbrook & Peterson, 2022). The literature on servant leadership style suggests servant leaders care about the well-being of their employees and keep them engaged. Consequently, it increases employees’ loyalty to the organizations (Zia, Naveed, Bashir, & Iqbal, 2022). Despite the importance of servant leadership style, literature shows inconclusive results on the association of servant leadership style and employees’ attitudes and behaviors. Some studies found a strong correlation between servant leadership style and turnover intention (Ling, Lin, & Wu, 2016), while others found insignificant associations in this relationship (Ahmed et al., 2018; Eva et al., 2019).

Despite the importance of tasks, researchers have inconsistent arguments regarding their definitions (Jach & Smillie, 2019). Some researchers include skills and knowledge in the definition of tasks, while others include performance and related psychological dimensions in the concept of tasks (Gao et al., 2020). The concept of task complexity is important in goal setting. While setting goals, managers must focus on the characteristics of the task and the employees’ capabilities (Krijgsheld et al., 2022). Besides motivational factors, researchers believe difficult goals or task complexity positively stimulates employees’ attitudes and behaviors toward work (Winkelhaus, Grosse, & Glock, 2022). The researcher believes task complexity and ambiguity directly affect turnover intention (Gao et al., 2020). Past studies have examined the effect of task ambiguity and complexity on servant leadership and turnover intention (Saleem et al., 2023). But a few have examined the moderating effect of task ambiguity and complexity on servant leadership and turnover intention. Thus we have examined the impact of servant leadership, task ambiguity, and task complexity on turnover intention. And the moderating effect of task ambiguity and complexity on servant leadership and turnover

intention.

Theoretical Grounding and Conceptual Framework

We have extended the Conservation of Resources (COR) theory that assumes employees acquire and conserve vital resources, including time and energy, to cope with future job-related problems and stresses (Cheng, Lyu, & Ye, 2023). The theory has four basic principles (Peng et al., 2023). Principle one assumes that the proportion of resources gains and losses in employees differ. They lose more resources than they gain (Jabeen et al., 2020). The second principle advises employees to invest in resources to “cope with task ambiguity, task complexity” (Sörensen, Rzeszutek, & Gasik, 2021). Principle three postulates employees, while losing resources, may understand the importance of gaining resources (Cheng, Lyu, & Ye, 2023). Principle four assumes that employees that lack resources are more aggressive and irrational than others (Peng et al., 2023). Many researchers believe that personal and organizational resources are important for employees’ attitudes and behaviors. Personal resources include “time and energy for family and work.” Organizational resources include “employer or boss support, rewards, and recognition” (Zhang et al., 2019). The study has used four variables in its conceptual framework presented in Figure 1.

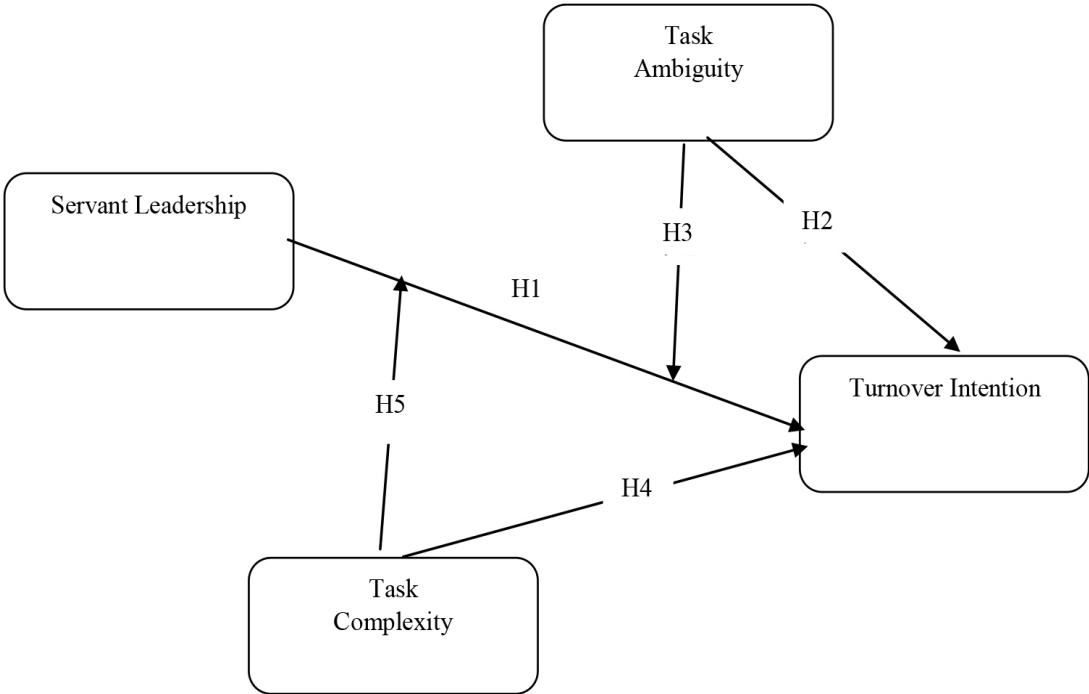


Figure 1: Conceptual framework

Literature Review

Servant Leadership and Turnover Intention

Servant leadership theory stresses that leaders develop a conducive environment for the followers that promotes a sense of attachment and loyalty to the firms (Prakasch & Ghayas, 2019). Servant leaders prioritize the needs of their followers and often sacrifice their goals for them (Westbrook & Peterson, 2022). The leaders look after their followers' well-being. Therefore employees develop a positive attitude toward work and low intention to switch jobs (Mustamil & Najam, 2020). Omanwar and Agrawal (2022) stress servant leadership, apart from directly affecting turnover intention, indirectly through organizational ethics and employee engagement affect turnover intention. Employees who work under servant leaders believe their leaders will help them when they are dissatisfied with their jobs and feel undue stress from their jobs-related outcomes (Achen et al., 2019). Employees' perception of their leaders' support reduces stress, positively affects well-being, and reduces turnover intentions (Li & Xie, 2022).

H1: Servant leadership negatively affects turnover intention.

Task Ambiguity and Turnover Intention

Task ambiguity is adverse working conditions and confuses employees on how to do their jobs. It promotes burnout and emotional exhaustion (Alblihed & Alzghaibi, 2022). Anees (2021) asserts that leaders' lack of clear direction promotes negative feelings and high turnover intention (Dodanwala, Santoso, & Yukongdi, 2022). At the same time, when employees find low role ambiguity, they develop a positive feeling about their future with the organization, reducing turnover intention (Li et al., 2022).

Puhakka, Nokelainen, and Pylväs (2021) asserts that when leaders do not give clear work-related directions to employees, they perceive that their leaders do not respect them. Lack of clarity on the job descriptions and responsibilities promotes a perception that employers want to control employees, which also promotes high turnover intention (Anees, 2021). Consequently, this negative perception motivates employees to seek new employment (Afzal et al., 2029). Lin and Huang (2021) believe role ambiguity often promotes a perception that organizations are not interested in employees' well-being, so their focus on seeking alternative employment increases.

H2: Task ambiguity promotes turnover intention.

H3: Task ambiguity moderates servant leadership and turnover intention.

Task Complexity Turnover Intention

Employees' motivation and attitudes toward work significantly depend on job design (Ogbeibu et al., 2022). Bande et al. (2021) assert that job description has multiple dimensions, including "skill variety, task identity, task significance, autonomy, and feedback." A complex job motivates employees to find a novel approach to find the solution rather than following the standard procedures. Apart from being challenging, a complex job requires multiple complex skills that promote excitement and interest in the employees (Chang et al. 2021). Thus job complexity promotes positive attitudes toward work. Many past studies have documented that job complexity promotes "motivation, organizational commitment, job engagement, and low turnover intention" (Cole et al., 2021). At the same time, many studies found that job complexity is negatively associated with turnover intention (Ogbeibu et al., 2022). Many past studies document that job complexity significantly predicts turnover intention (Cho, Lee, & Kim, 2019).

H4: Task complexity negatively affects turnover intention.

H5: Task complexity moderates servant leadership and turnover intention.

Methodology

Participants and Procedures

The study aimed to ascertain the influence of servant leadership, task ambiguity, and task complexity on turnover intention and the moderating roles of task ambiguity and task complexity on servant leadership and turnover intention. The study has focused on SMEs in Pakistan since it generates high employment at low investment worldwide. The study employed five BBA students to collect the data from the preselected SMEs, using a questionnaire adopted from earlier studies. The enumerators distributed 300 questionnaires and received 252.

The respondents' profile suggests 68% were males and 32% were females. Concerning marital status, we found 43% were married, and 57% were single. The education profile suggests 53% of respondents had a high school education, 27% had a Bachelor's degree, and the rest had Master's degrees.

Pretests

The study conducted two pretests before administering the questionnaire to the target population. Initially, we distributed the questionnaires to a sample of 35 graduate students to have their input on the content and wording of the questionnaire. The respondents, after the pretest, informed us that they found no ambiguous questions.

Also, they confirmed there was no issue with the wording and flow of the narration. We selected another sample of 40 students in pretest two and administered the complete questionnaire. The pretest two shows that internal consistency, normality, and validity were within the acceptable range.

Scales and Measures

The scales and measures used in the study have 19 questions, three related to demographics and 16 related to the indicator valuables. We have measured responses related to the demographics on the nominal scale and the rest on the 5-Point Likert scale. “Five suggest a high agreement and one low agreement.” Table 1 depicts the summary of the scales and measures.

Table 1: Scale and Measures

Constructs	Sources	Indicators
Servant Leadership	Barbuto Jr and Wheeler (2006)	4
Turnover Intention	Jaramillo et al. (2009)	4
Task Ambiguity	Nishina, H. (2012).	4
Task Complexity	Liu and Li (2012).	4

Statistical Analysis

We have used Smart PLS for data analysis. We adopted two steps procedure. In the first step, we generated a measurement model for the reliability, validity, and predictive power results. In the second step, we generated a structural model for the results related to the hypotheses.

Results and Findings

Measurement Models

Before generating the structural model, we generated a measurement model for “reliability and validity results.” We have presented the measurement model in Figure 2 and the results in subsequent sections.

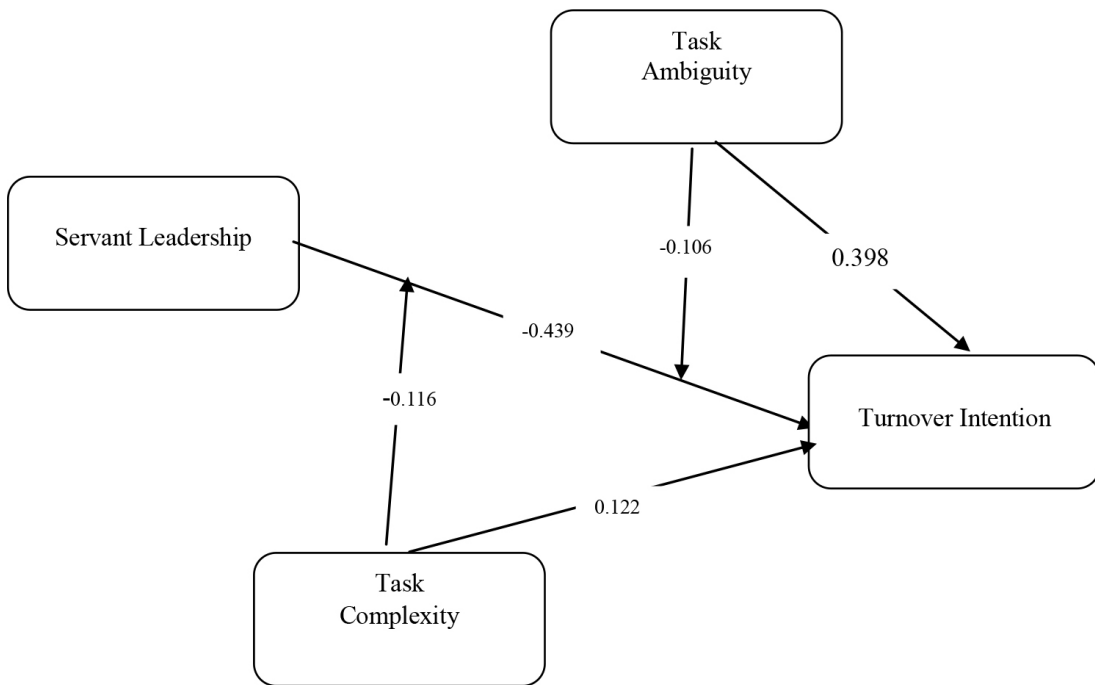


Figure 2: Measurement Model

Descriptive

The descriptive analysis in Table 2 shows the results related to internal consistency, means standard deviation, Skewness, and Kurtosis.

Table 2: Descriptive

Variable	Cronbach's α	Mean	Std. Dev	Skewness	Kurtosis
Servant Leadership	0.903	4.723	0.851	-0.359	-1.362
Task Ambiguity	0.870	4.202	0.952	-0.412	-1.197
Task Complexity	0.767	4.037	0.774	-0.401	-0.806
Turnover Intentions	0.888	3.756	0.527	-0.453	-1.197

We found Cronbach's Alpha values ranged from 0.767 to 0.903. At the same time, all Skewness and Kurtosis values are between ± 2.5 . Thus, we have inferred that the constructs used in this study meet the requirements of "internal consistency and univariate normality" (Hair et al., 2019).

Converging Validity

The study presents composite reliability and AVE values in Table 3. We found all

the composite reliability values are higher than 0.70 and AVE values greater than 0.70, suggesting the constructs satisfy the requirements for convergent validity.

Table 3: Convergent Validity

Variable	Composite Reliability	Average Variance Extracted
Servant Leadership	0.932	0.775
Task Ambiguity	0.911	0.719
Task Complexity	0.851	0.752
Turnover Intention	0.923	0.749

Discriminant Validity

In Table 4, we have presented results related to discriminant validity showing “AVE square root values are greater than Pearson Correlation values.” Thus we have concluded that the constructs used in the study are unique and distinct” (Fornell & Larcker, 1981).

Table 4: Discriminant Validity

	SL	TA	TC	TI
Servant Leadership	0.880			
Task Ambiguity	0.701	0.848		
Task Complexity	0.681	0.804	0.807	
Turnover Intentions	0.805	0.801	0.741	0.865

The Output of a Structural Model

The outputs of the structural model were derived using a one-tailed test and bootstrapping of 5,000 subsamples at a 95% confidence level. Table 5 presents the findings, and Figure 3 shows the structural model.

Table 5: Hypothesis Results

Variables	β	t-Stat	p values	Results
Servant Leadership -> Turnover Intention (H1)	-0.439	6.329	0.000	Accepted
Task Ambiguity -> Turnover Intention (H2)	0.398	5.052	0.000	Accepted
Servant Leadership -> Task Ambiguity-> Turnover Intention (H3)	-0.106	1.447	0.148	Rejected
Task Complexity -> Turnover Intention (H4)	0.122	2.137	0.033	Rejected
Servant Leadership -> Task Complexity -> Turnover Intention (H5)	-0.116	1.969	0.499	Accepted

The results validate Hypothesis 1, stating “servant leadership negatively affects turnover intention” ($\beta=-0.439$, $t=6.329<.05$). We accepted Hypothesis 2, stating “task ambiguity positively affects turnover intention” ($\beta=0.398$, $t=5.052<.05$). The study did not find support for Hypothesis 3 stating “task ambiguity moderates servant leadership

and turnover intention" ($\beta = -0.106$, $t = 1.447 > .05$).

The results do support Hypothesis 4, stating "task complexity negatively affects turnover intention" ($\beta = 0.122$, $t = 2.137 < .05$). Although the relationship is significant, we rejected it because the relationship is positive, contrary to the assumption that the relationship would be negative. The study accepted Hypothesis 5, stating "task complexity moderates servant leadership and turnover intention" ($\beta = -0.116$, $t = 1.969 < .05$).

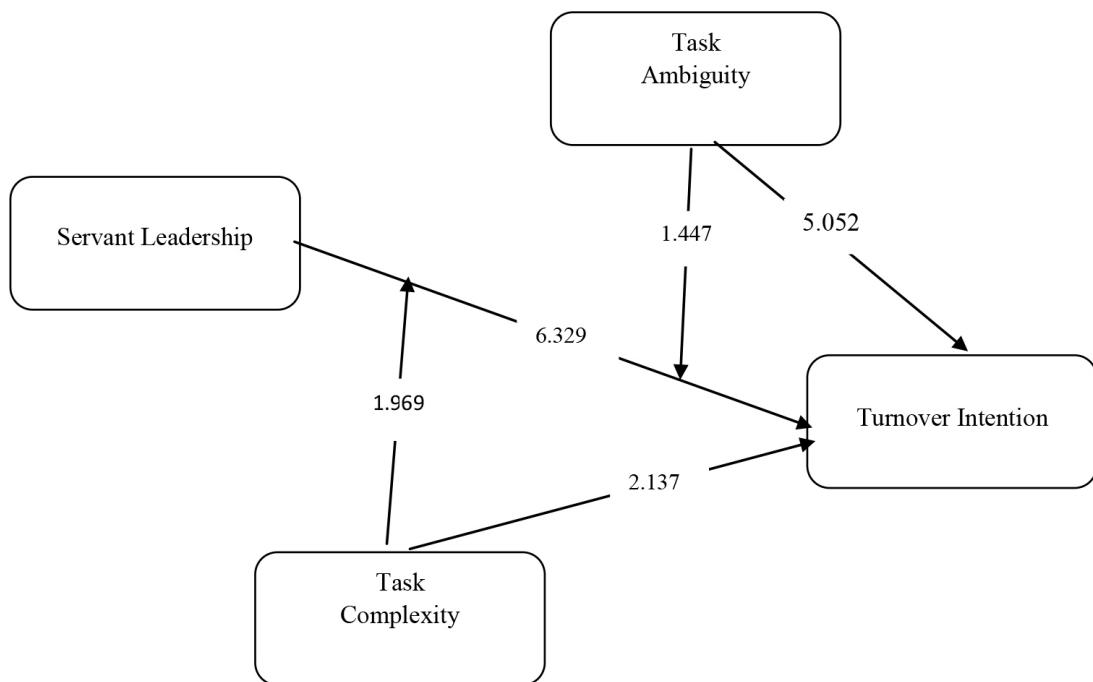


Figure 3: Structural Model

Discussion and Conclusion

The study found that "servant leadership negatively affects turnover intention." Servant Leadership Theory stresses that leaders develop a conducive environment for the followers that promotes a sense of attachment and loyalty to the firms (Prakasch & Ghayas, 2019). Servant leaders prioritize the needs of their followers and often sacrifice their goals for them (Westbrook & Peterson, 2022). The leaders look after their followers' well-being. Therefore, followers develop a positive attitude toward work and have a low intention to switch jobs (Mustamil & Najam, 2020). Omanwar and Agrawal (2022) stress servant leadership, apart from directly affecting turnover intention, indirectly through organizational ethics and employee engagement affect turnover intention. Employees

who work under servant leaders believe their leaders will help them when they are dissatisfied with their jobs and feel undue stress from their jobs-related outcomes (Achen et al., 2019).

We found that “task ambiguity positively affects turnover intention and task ambiguity insignificantly moderates servant leadership and turnover intention.” Task ambiguity is adverse working conditions and confuses employees on how to do their jobs. It promotes burnout and emotional exhaustion (Alblihed & Alzghaibi, 2022). Afzal et al. (2019) assert that leaders’ lack of clarity and direction to employees promotes confusion and increases turnover intention (Dodanwala, Santoso, & Yukongdi, 2022). At the same time, when employees find low role ambiguity, they develop a positive feeling about their future with the organization, reducing turnover intentions (Li et al., 2022). Puhakka, Nokelainen, and Pylväs (2021) assert when employees believe the leaders do not respect them, they develop negative attitudes toward the job leading to high turnover intention. Role ambiguity often promotes a perception that organizations are not interested in employees’ well-being, so their focus on seeking alternative employment increases (Lin & Huang, 2021). Lack of clarity on the job descriptions and responsibilities promotes a perception that employers want to control employees strictly, promoting high turnover intention (Anees, 2021).

We found “task complexity positively affects turnover intention and significantly moderates servant leadership and turnover intention.” Employees’ motivation and attitudes toward work significantly depend on job design (Ogbeibu et al., 2022). Bande et al. (2021) assert that job description has multiple dimensions, including “skill variety, task identity, task significance, autonomy, and feedback.” A complex job motivates employees to find a novel approach to find the solution rather than following the standard procedures. Apart from being challenging, a complex job requires multiple complex skills that promote excitement and interest in the employees (Chang et al. 2021). Thus job complexity promotes positive attitudes toward work. Many past studies have documented that job complexity promotes “motivation, organizational commitment, job engagement, and low turnover intention” (Cole et al., 2021). At the same time, many studies found that job complexity is negatively associated with turnover intention (Ogbeibu et al., 2022; Cho, Lee, & Kim, 2019).

Implications

The study has several implications for policymakers and marketers. Turnover intention is a problematic issue worldwide. All the organization leaders have different leadership skills, mostly in-built and partially acquired. Consequently, organizations are suffering since attracting new talent is challenging and expensive. We found servant leadership

style negatively affects turnover intention, suggesting that firms, while hiring new leaders, may focus on those with servant leadership traits.

Firms must arrange seminars, workshops, and counseling sessions for leaders and employees. Such sessions may motivate leaders to focus on employees' needs and well-being. Due to a lack of job description and direction, employees often get confused, adversely affecting their motivation, well-being, and productivity. Consequently, they start looking for new jobs. Thus, we recommend that the employees' job descriptions must have clarity. The leaders must be clear about what they expect from the employees by communicating verbally and in writing. We also suggest that leaders delegate jobs by aligning employees' characteristics, skills, and job requirements.

Limitations and Future Research

This research measured the effect of "servant leadership, task ambiguity, and complexity on turnover intentions" and the moderating roles of "task ambiguity and task complexity." Other researchers may use these variables as mediators between servant leadership and turnover intentions. We have focused on SMEs in Karachi and advice others to extend this model to other sectors and cities. We have focused on servant leadership style, and other studies may examine the impact of other leadership styles on turnover intentions. Spirituality and ethics affect job-related consequences, which we did not consider in this study. Examining these aspects may bring more insight into the discussed phenomenon.

Annexure:1

Constructs and Items Used in the Questionnaire

Servant Leadership

SL1. This person puts my best interests ahead of his/her own.

SL2. This person could help me mend my hard feelings.

SL3. This person has great awareness of what is going on.

SL4. This person is very persuasive.

Turnover Intention

TI. I do not think I will spend my entire career with this organization.

TI2. I intend to leave this organization within a short period.

TI3. I have decided to quit this organization.

TI4. I am looking at some other jobs now.

Task Ambiguity

TA1. I don't tolerate ambiguous situations well.

TA2. I try to avoid ambiguous situations.

TA3. I prefer familiar situations to new ones.

TA4. I am tolerant of ambiguous situations.

Task Complexity

TC1. A higher job priority and a short duration affect the complexity of the task.

TC2. The number of sub-tasks in the task description affects the complexity of the task.

TC3. The number of terminologies in the task description affects the complexity of the task.

TC4. A hard to understand narration in the job affect the complexity of the task.

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

A Systematic Review in the World of the Metaverse

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Abstract

Metaverse uses “virtual reality” in e-commerce to create immersive virtual spaces. The philosophy behind it is to make people addicted to virtual 3d reality, and with the options of “teleportation, changing environment, and using cryptocurrency to shop,” this will be the ultimate future of technology. Apart from the benefits of the metaverse, it has many challenges, including “cyber security.” This study has synthesized past literature into nine themes based on a systematic review. All nine themes deal with the potential challenges and opportunities for users, including buyers and sellers. People can live an ideal life in the metaverse, leading to the denial mode of not accepting the real world and prefer living in the metaverse. For example, bald individuals can get a head full of hair in the metaverse. Someone with a disability can walk and fly in the metaverse. All these lucrative features will make virtual life more like heaven and real life like hell.

Keywords: *Virtual commerce; immersive technology; metaverse, cyber security, addiction, regulations.*

Introduction

Multiple users through a single browser can connect to multiple websites. Similarly, the metaverse is an online 3-D virtual space that allows users to interact, socialize, meet, and play games (Mystakidis, 2022). The concept of the metaverse is not new. The science fiction novel “Snow Crash” used this concept in 1992, which is now a reality (Wang et al., 2022). With the advancement of technology, consumers worldwide can connect

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and interact with each other (Kshetri, 2022). Internet-based smart devices, including smartwatches and smart mobiles, allow users to track each other activities and data. Many users collect and sell personal data of others (Buchholz, Oppermann, & Prinz, 2022).

Wang, Lee, Braud, and Hui (2022) assert that consumers are aware of the risks associated with using these devices but continue to use these devices because they offer many benefits. In most cases, the users are unaware that other users might collect their data. For example, when users talk on a smartphone, they don't realize that some users might be recording their conversations, adversely affecting their privacy (Damar, 2021). These devices collect different data types, including consumers' and behavior attitudes. It also collects data on users' physical and cultural values. Many consumers believe that these devices' benefits outweigh the privacy risks. (Al-Suwaidi & Zemerly, 2009). VR, an essential component of the metaverse, can compromise users' privacy. Mozumder et al.(2022) assert that metaverse users must show sensible social behavior. The metaverse duplicates what individuals find in real life, for instance, structures, roads, and people. It has the capability of constructing things that do not exist.

In the following sections, we have discussed the methodology, followed by the literature review and conclusion.

Methodology

Based on a systematic literature review, this research paper gives an overview of the metaverse from a broad perspective. It also focuses on the potential challenges and solutions for the metaverse users. A systematic literature review is considered a rigorous approach. Using it, the authors identify, evaluate, and interpret available literature relevant to the research topics. This paper adopted literature that has examined the attitudes and behaviors of metaverse users and the challenges they face. We have used this approach to study multiple emerging topics in information communication systems, including the application of VR/AR (Duan et al., 2021), usage of blockchain systems to protect the digital twins inside the metaverse (Chen, Lee, Chang, Choo, & Zhang, 2019), privacy concerns of bystanders and non-users (Aditya et al., 2016), and social metaverse (Al-Suwaidi & Zemerly, 2009; Shu, Zheng, & Hui, 2018).

This paper reviewed relevant research papers from eight online scholarly databases, including Emerald, Science Direct, Scopus, EBSCO, Web of Science, Wiley, ProQuest, and SpringerLink. The eligible criteria to review the papers ensured that all included results could contribute to at least one of the four research questions. Furthermore, the methodology of this paper aligns with the guideline of a systematic review previously

used by Kitchenham (2007). It includes preparation, analysis, and reporting. The study specifically addresses the following research questions.

1. How do clients behave towards the metaverse?
2. What are the significant privacy challenges metaverse users face?
3. What are the possible solutions for users in virtual commerce?
4. What are the possible solutions for metaverse users in application design?

Criteria for Selecting Research Papers

Table 1 depicts the criteria we used to exclude and include the research papers.

Table – 1 Criteria for Selecting Each Research Paper

1. Exclusion	2. Inclusion	3. Eligibility	4. Relatedness
We excluded papers whose full-text version is not available.	We Included papers whose full test version is available.	Originally published papers in reputed academic journals were eligible	Answer question Q1 and either Q2 and Q3 or Q4.
Research papers that are not relevant to the metaverse.	Research papers are relevant to the metaverse.	Research papers that were complete in all aspects	--
The language of the papers is not English.	The language of the papers is English.	Address a research topic related to the metaverse.	--

Challenges and Potential Solutions

Challenge 1: Privacy and Identity

In the metaverse, people can make avatars based on their appearance in the real world or use fictitious personal data, including name, age gender. Many users use fictitious data as they do not want to disclose their real identity to other avators (Wang et al., 2022). Players can interact and watch the user’s activities using symbols while playing the game. For instance, in the game “Second Life - an open-world social metaverse,” the players can use a symbol instead of a real name (Antin, 2020). Far and Rad (2022) assert that one of the limitations of VR technology is the users are not sure who is watching or following them. The literature suggests that the users act in the metaverse in the same manner as they would in real life. Thus, their attitudes and behaviors in the metaverse may resemble their real-life attitudes and behaviors (Leenes, 2008).

As refer above, users are vulnerable to constant observation when their avatar interfaces with different ones in the metaverse. Players can protect themselves from

the threat of security, risk, and vigilance of others by using multiple avatars (Far & Rad, 2022). The users can make different avatars and behave differently in each. This strategy may confuse other avatars as they cannot distinguish between the avatars using real or fictitious personal data (Canbay, Utku, & Canbay, 2022). The avatar can have different configurable ways of behaving. For instance, while purchasing a product in the metaverse, the user can create one more avatar that purchases the same product. This strategy may confuse the attackers about who the real avatar is (Ghirmai et al., 2023). Alternatively, the avatar can make temporary and private copies of a piece of the metaverse (e.g., a recreation area). Through this approach, the attacker will not be able to listen to the user (Japar et al., 2023).

API integrates the duplicate copies of the metaverse by merging them with the main metaverse. If the private portion of the metaverse and the main metaverse is not fully aligned and updated, it will create problems for the users in the future (Mitrushchenkova, 2023). A potential solution to the privacy problem is that the users create their invisible avatars in the metaverse. It will allow them to communicate with others without the fear of being monitored (Kalyvaki, 2023). Since private duplicates restrict the sharing of the assets of primary texture, it will be difficult for others to copy them. Tran et al. (2023) assert that in these virtual situations, fakes and substitute portrayals can adversely affect clients' attitudes and behavior.

In the metaverse, the created virtual universes can be dangerous in the context of security. For example, fake portrayals may confuse and deceive users since they may not be able to distinguish between real and fake portrayals (Mitrushchenkova, 2023). The attacker can develop creative ideas that create a fearful sense of urgency. Consequently, the users may disclose their personal and secure information to the attackers leading to scam/fraud in the metaverse. For example, the users may disclose the private key of the cryptocurrency wallet or any other financial or private information, which may eventually hurt the users (Gupta et al., 2023). Users are vulnerable to many security and privacy risks in the virtual world. Many strategies are available for protecting users from unwarranted security risks (Bibri & Allam, 2022). The attackers in the metaverse learn what clients intend to purchase. Using this knowledge, they may develop comparable virtual items which the client may purchase deceptively (Mitrushchenkova, 2023).

Challenge 2: Governance of Ethics and Laws

Alternate aspects, such as deep fakes in the metaverse, can adversely hurt users (Fernandez & Hui, 2022). McStay (2023) asserts a need for regulating and governing in the metaverse. For example, in the US, there are regulations regarding privacy and security in the context of the metaverse (Leenes, 2008). Mitrushchenkova (2023) asserts that the growth and popularity of the metaverse significantly depend on making ethical

laws for users. Thus, regulators must develop codes of conduct to monitor users' chat logs and conversations (Ferebee, 2022).

Such regulations can assist the metaverse developers in banning users reported for using fraudulent means to deceive consumers. The governance aspects may include restrictions and penalties for the banned users (Kasiyanto & Kilinc, 2022). The rules and regulations may vary from one country to another. Therefore, the metaverse may have to align with the rules and regulations of the host country (Qu, 2022). Few authors believe that the gradual implementation of tools and techniques will allow specific groups to control their group members, similar to a federated model. The metaverse users can create specific rules and regulations, like allowing entrance to users with similar affinities (Anshari et al., 2022). Blockchain technologies will also force users to adhere to the rules and regulations. Such rules and regulations will guide users to behave according to rules and regulations, discouraging misbehaviors. The creators of the metaverse can punish users who fail to follow the rules and regulations (Kasiyanto & Kilinc, 2022)

Challenge 3: The Protection of Digital Twins

Digital twins mean creating virtual objects that resemble the original in terms of "physical appearances and behavioral performance" (Far & Rad, 2022). Such objects can clone "real-world objects and systems" (Lv et al., 2022). The interactions in the metaverse are crucial as they improve physical systems, resulting in innovation and enhancing user experience (Jamshidi Ebadpour & Moghani, 2022). Metaverse must protect digital twins by close monitoring and ensuring that created digital twins resemble the original (Rasheed, San, & Kvamsdal, 2020). Thus to protect digital twins, the metaverse must have an effective information system. Blockchain, with a mechanism of a distributed single chain, helps store data inside a cryptographic block (Nofer, Gomber, Hinz, & Schiereck, 2017). Blockchain systems use biometric data to store and protect digital twins (Han et al., 2022). The peer-to-peer network verifies and validates each new block before including the new record in the chain (Reyna, Martín, Chen, Soler, & Díaz, 2018). Recent application development has made it possible to launch non-fungible tokens (NFT), a new form of a digital ecosystem market (Sghaier Omar & Basir, 2020). It allows digital twin creators to classify their products as new, innovative, and unique (Han et al., 2022).

Challenge 4: Safeguarding Biometric Data

Metaverse using data from the physical world, such as hand movements, creates an immersive user experience (Duan et al., 2021). The introduction of gadgets such as "VR head-mounted displays, unique wearables such as gloves and special suits" can provide a more realistic and immersive experience in the metaverse. These devices give users more control over their avatars (Egliston & Carter, 2021). Another example would be

a different sensor attached to the user, such as a gyroscope, to track the user's head movements (Smith et al., 2023). The "biometric integrates input and output data." As a result, users can have a holistic experience interacting with other avatars (Duan et al., 2021). At the same, these biometric data have several disadvantages for users, including more vulnerability to privacy threats (Smith et al., 2023). McSta (2023) asserts that digital twins generate real digital assets in the metaverse using real biometric data. Thus digital twins, on the one hand, need to protect the data from attacks and, on the other hand, ensure its accessibility to digital twins and other related devices.

Challenge 5: Ease of Digital Attacks

Users of the metaverse ecosystem are vulnerable to privacy and leakage issues. Therefore developers must pay attention to it in the earlier stages. If they do not address these issues, the developers may have to redesign it from scratch, resulting in a loss of data and time (Acquisti, Taylor, & Wagman, 2016; Nofer, Gomber, Hinz, & Schiereck, 2017). For example, the "third-party cookies-based advertisement ecosystem" was based on cookies that mainly keep track of users' activities for providing personal advertisements. Since the system had significant privacy concerns, privacy regulators like GDPR had to intervene. Google decided to eliminate third-party cookies from Chrome in 2022, killing the "third-party cookies-based advertisement ecosystem" (Aditya et al., 2016; Shu, Zheng, & Hui, 2018). In recent years the public has protested the ubiquitous presence of technologies in the metaverse. Despite all the good intentions of the devise owners, the users are still unsure about the privacy and security of data. Subsequently, many developers, designers, and users offered a solution to tackling the issues arising from the "ubiquitous presence of technologies" (Aditya et al., 2016; Shu, Zheng, & Hui, 2018). A system with a built-in verifiable mechanism may increase its social acceptability. At the same time, if the users are not worried about sharing their data, the new system will not face any social desirability issues (Dilibal & Tur2022).

Users are not bothered if they know how other parties use their data. However, they protest if they find variations in data's perceived and actual usage. For example, many Facebook users share their data willingly (Canbay, Utku, & Canbay, 2022). However, users strongly protested when they found that Cambridge Analytica Data misused their data. As a result, "The US Congress and the UK parliament" summoned Facebook and Cambridge Analytica. Subsequently, Cambridge Analytica had to file for bankruptcy (Confessore, 2018). Besides many solutions, one suggests not collecting users' data. However, this may be counterproductive in terms of growth and innovation. The German Chancellor Angela Merkel proposed another solution that enables users to sell their data for monetary or non-monetary benefits. Many researchers have also given valuable insight into the "economics of privacy" and the structure for "efficient privacy

trading” (Pal et al., 2018). Implementing the above concepts may enhance the data flow and compensates users adequately for their data (Sen, Joe-Wong, Ha, & Chiang, 2013).

Challenge 6: Addiction

The most important issue with the extensive growth of the metaverse is people spending excessive time in the virtual digital environment leading to addiction (Bojic, 2022). Extant literature suggests numerous people are already addicted to virtual cyberspaces and social networking sites (Liu & Gao, 2022). Like all addictions, metaverse-addicted users will use it to escape “real-world problems” (Dutilleux & Chang, 2022). It’s a bitter reality, but user addictions to digital spaces and the virtual world may lead to psychological and mental disorders, including depression, loneliness, and aggression (Kerdvibulvech, 2022).

The COVID-19 pandemic has provided a viable and efficient alternative to physical meetings and social interaction in the form of virtual meetings. Many researchers believe excessive and extensive virtual meetings may lead to abuse or addiction to the Internet (López- García, Sánchez Gómez, & García-Valcárcel Muñoz-Repiso, 2020). Extant literature documents AR/VR platforms are examples of metaverse addiction. Many studies have examined the causes of behavioral addiction in VR and their treatments (Segawa et al., 2020). AR games such as Pokémon Go can also help learn the behavioral changes of mega players, such as spending patterns, group-oriented actions in urban areas, and dangerous actions in the actual world. All these behavior changes can have a destructive impact on society (Colley et al., 2017). The virtual environment allows users to engage in “impossible or immortal” activities. It is highly likely that in the metaverse, users “could experience super-realism,” which mainly means that they will engage in activities that “resemble the real world.” It may include experiencing racial attacks (Lewis & Taylor-Poleskey, 2021).

Challenge 7: Cyberbullying

Cyberbullying means bullying a person in cyberspace. It may include posting harmful content in cyberspace, posting hate speech, making fun of someone’s physical disability, and making jokes about ethnicity (Chatzakou et al., 2019). Metaverse is a humongous cyberspace, and cyberbullying in the metaverse will be inevitable. In the long run, the metaverse will not be able to operate on a full scale without regulations regarding cyberbullying. The authorities will then have to step up and shut down some virtual spaces where they deduct cyberbullying in the metaverse. Using algorithms can help to detect cyberbullying (Yan et al., 2021). The balanced approach of such algorithms (Singh & Hofenbitzer, 2019) will have perceived fairness to all the users in the metaverse. If the metaverse regulator fails to take timely action against cyberbullying

users, it can seriously hurt the customer journey in the metaverse (Qasem et al., 2022; Yıldız & Tanyıldızı, 2023; Tugtekin, 2023; Anshari et al. 2022).

Challenge 8: The Environment

The virtual world records all user activities, like some social media websites that monitor users, record data, and sell it commercially (Sá & Serpa, 2023). The same can happen in the 3D virtual world, where it will record every activity, even the smallest detail, like an avatar looking at the billboard twice or the avatar taking an interest in the virtual shop selling sneakers (Mystakidis, 2022). Subsequently, the virtual environment will show the advertisement/ billboard or the environment related to users' interests.

For instance, if users like flowers, the display will show them a garden full of roses. Keeping a record of users' physical touch is required so the environment can react to their actions (Rillig et al., 2022). For instance, if a user flips a page in a book in the metaverse, the reaction will be a flip of a page. All this will happen through the tracking of the avatar activities so that the environment can respond to the action accordingly (López García, Sánchez Gómez, & García-Valcárcel Muñoz-Repiso, 2020). A highly customized avatar helps the user to escape personality deficiency. The metaverse creates an environment per user liking. For example, bald people can have an avatar full of hair in the metaverse.

Similarly, persons with a physical disability can have an athletic body in the metaverse. The feeling of perfection will make it an inescapable virtual room for the users. (Carter, 2022). It is one reason all the big brands are jumping into the metaverse world. Literature suggests that the metaverse could become a \$13 trillion market by the end of 2030 with a whopping 5 billion users. "Metaverse will be a most popular place to buy, trade, and store cryptocurrency" (Metaverse Bitcoin News, n.d.). Continuous improvements in the metaverse environment aim to make it look close to reality (Zauskova, Miklencicova, & Popescu, 2022).

Conclusion and Recommendations

In the present era, consumers' attention has shifted toward social media. The platforms will be more interactive and closer to reality. They aim to ensure people spend time in the metaverse rather than the real world. The investment into the metaverse will promote engaging content just like social media. It will allow forward-thinking brands to display their products or advertisements in the metaverse (Kim, 2021). The primary goal of these brands is to engage customers with interesting content. The more engaging the contents are, the more money the brands will earn (Holsapple & Wu, 2007). All big brands may spend their resources on social media. As a result, the jobs for digital content creators may increase.

The same will go for the metaverse. The idea behind it is to make people addicted to virtual 3d reality, and with the options of teleportation, changing environment, and using cryptocurrency to shop, this will be the ultimate future of technology. People can live a perfect life in the metaverse. They eventually will get into the denial mode of not accepting the real world and prefer to live in the metaverse. For example, bald individuals can get a head full of hair in the metaverse. Someone with a disability can walk and fly in the metaverse. All these lucrative features will make virtual life a dream life more like heaven and real life as hell (Luke & Evelina, 2017; Ding, Xu, Chen, & Xu, 2016).

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Estimation of Financial Inclusion Index for Low and Lower-Middle-Income Countries

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Abstract

This study aims to estimate the financial inclusion (FI) index in Low- Income and Lower-Middle- Income (LLMI) Countries. The study used the Principal Component Analysis technique and Euclidean Distance Method to estimate the FI index for 39 LLMI countries over 11 years, from 2010 to 2020. For constructing the index, this study used four dimensions, i.e., “financial access, financial usage, infrastructure & communication technology, and banking cost.” These findings suggest that the exploitation of FI is the reason behind the low FI level in LLMI countries. Moreover, these countries have a higher banking costs compared to high-income countries. Therefore, financial inconsistency and banking competition hinder achieving an ideal FI level. This study also discusses policy recommendations for optimal FI in LLMI countries. From a policy perspective, strong regulation for FI is necessary for countries with unstable economic conditions, such as Ghana, which has an unsuitable economic condition to enhance FI. To increase the level of FI, the government must develop a strategic framework to improve FI. FI policy must focus on initiating, monitoring, and developing FI in the country.

Keywords: *Financial access, financial inclusion, financial institution, digital innovation.*

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Introduction

Financial inclusion (FI) is an important tool the policymakers use for a country's financial and economic development (Demir et. 2022). It reduces poverty and inequality in a country by making "financial products and services" accessible to individuals (Zulhibri, 2016; Huang & Zhang, 2020). Households living condition improves when they use it rationally (Jungo et al., 2022). Zins and Weill (2016) assert that public authorities use FI to develop all segments of a country by providing them with "easy access to financial products and services." Most of the population in developing and emerging economies cannot access financial products easily. Therefore, entrepreneurship activities in these countries depend on family financial support and borrowing from non-conventional sources at high-interest rates (Huang and Zhang 2020). Given its importance, international donor agencies and developed countries have taken significant initiatives to develop FI in developing and emerging economies (Owen and Pereira 2018). Vo et al. (2021) assert that important components of FI are "articulating employment-oriented growth strategy, investing in human development, reinforcing FI, and multidimensional interventions."

Stability in a country's banking sector enhances the availability of "financial products and services" that profoundly "increase FI" (Anarfo et al., 2020). Banks in a country connect the "financial system with the real economy," while FI increases the effectiveness of monetary policy and controls inflation in a country (Jungo et al., 2022). Thus, the regulatory bodies in a country must focus on "mitigating credit risk and increasing banks stability." Such measures may help most disadvantaged customers who do not have easy access to financial products (Ackah & Asiamah, 2016). Financial regulations are important but could "increase or reduce the efficiency of a country's banks and financial institutions" (Gaganis et al., 2021).

Extant literature documents that to control financial crises apart from financial regulations, policymakers must use some other measures simultaneously (Atellu et al. 2021). At the same time, Anarfo et al. (2020) believe that financial stability in a country enhances the relationship between "financial regulations and FI." FI enhances the banking customer base and increases a country's financial products and services (Atellu et al. 2021).

The customer base increases the "operational cost of a bank and the volume of small transactions" (Musau et al., 2018). New bank customers often have no credit history and lack expertise in using financial products and services. Consequently, it increases "banks' credit risk" (Atellu et al. 2021). At the same time, FI enhances banking stability by

enhancing loan and deposit portfolios and decreasing “financial risk” (Musau et al., 2018). The banking regulation in some developing countries is complex and complicated, due to which individuals invest in pension funds, mutual funds, and insurance companies through financial intermediaries. Such investments retard the development of the financial system (Zainal et al., 2012).

This study investigates whether or not the current level of FI is optimal in low and lower-middle-income (LLMI) countries. For this purpose, this study has constructed the FI index using the combination of the Principal Component Analysis (PCA) and Euclidean Distance (ED) method. The rest of the paper is structured as follows: In Section-2, we have discussed the past literature measuring the FI index. Section 3 relates to the methodology in which we have discussed variables used and sources from where we obtained the data set. Section 4 depicts the empirical research of this study. Section 5 presents the conclusion and policy implications of this study.

Literature Review

Researchers have defined financial inclusion (FI) from different perspectives and contexts. Some have included social activities in the definition of FI, while others have not (Mpofu & Mhlanga, 2022). Exclusion has many forms, including “location, information, and financial knowledge of financial products” (Menon, 2019). Panos and Wilson (2020) define FI as a “lack of access to financial resources.” Niaz (2022) asserts that a well-developed financial system generates economic activities and attracts investments necessary for a country’s development. Individuals in an underdeveloped financial system have to bear high costs to obtain financial goods and services (Nguyen & Du, 2022). Therefore, the policymaker may must develop policies to bring stability to the financial system of a country. Chuc et al. (2022) assert that the quality of financial services is poor in an underdeveloped financial system. Therefore, it is not rational to justify investing in new ventures and deprive the lower-income segment of economic benefits. Most researchers agree that FI is “critical for economic and financial development.” However, most researchers have different perspectives on measuring the FI index and FI rates (Muhammad, Ngah & Obad, 2022).

Different researchers have proposed different models to measure the global index. Therefore global model index varies from country to country depending on the model a country uses (Wang et al., 2022). Reshi and Siddha (2023) assert that the focus of developing countries is to reduce gender discrimination and generate economic activities and employment. Such policies may also reduce discrimination in the finance domain and promote economic development in the vulnerable group of society. Past studies have used different databases to measure FI. For example, Sarma and Pais

(2011) used the World Bank database and economic approach to develop the FI index. Using data sets from different countries, Cicchiello et al. (2021) concluded: "formal financial services are more inclusive of families headed by men." Wang and Guan (2017) estimated the FI rate using a data set of eighty countries that allowed them to compare results between "developed and developing countries." Another researcher using the World Bank data set and social factors, including "income, literacy, and urbanization," concluded that development significantly promotes FI (Sharma & Tuli, 2012). Another study validated the association between "literacy, population, and income" and FI (Kairiza et al., 2017). Kumar (2012), based on the data set of major cities in India, found customers' access to financial and banking services reduces poverty.

Many researchers believe that "income and education" are critical precursors of financial services (Demir et al., 2022). Based on empirical evidence, Park and Mercado (2021) found that banking and financial stability and changes in the financial system are necessary for decreasing inequality. Omar and Inaba (2020) found that increasing FI in sub-Saharan countries reduced poverty in low-income households. The study also documented it increased the households' net worth and social benefits.

Adeola and Evans (2017) document that "FI" promotes prosperity and reduces poverty in a country. A study using "firm-level data from emerging economies" found FI has stimulated economic growth in Middle Eastern countries (Kim et al. 2018). While examining the impact of "FI and bank competition" on firm performance, Chauvet and Jacolin (2017) documented that "FI and bank competition" promotes firm performance, especially in less concentrated bank markets. The study also concluded that a highly competitive bank enhances firm growth, provided FI is high. Based on a data set collected from 31 Asian countries, a study documented that "financial efficiency negatively affects financial efficiency" and positively "affects financial sustainability" (Le, Chuc, & Taghizadeh-Hesary, 2019).

While examining the role of "FI on poverty and income inequality," Mushtaq and Bruneau (2019) concluded, "Information and communication technologies (ICT) promote FI" and economic growth and negatively affect poverty and inequality. Ouechtati (2020) documented that FI "reduces poverty and income inequality" by increasing access to credit to individuals. Another study in developing countries concluded that FI is a critical factor for growth and development in Nigeria. The study used a data set of 53 developing countries (i.e., 2004 to 2017).

Research Methodology

Data Source and Variables

We obtained financial indicators from the Financial Access Survey and social indicators from World Development Indicators (World Bank, 2019). Table 1 represents the FI Index and its indicators. The sample size of LLMI countries is 39, including nine low-income countries and 09 lower-middle-income countries depicted in Table 1.

Table 1: Dimensions of Financial Inclusion (FI) Index and their Financial Indicators

Dimensions	Indicators/Symbol	Symbol	Countries	Mean Dev.	Std.	Min	Max	Weight
Financial Access	Commercial bank branches /100,000 adults	CBB	Burkina Faso, Guinea, Madagascar,	10.21	12.41	0.41	71.23	0.3
	Commercial bank branches/1,000 km2	CBB ^{SQ}	Mali, Mozambique, Niger, Rwanda,	8.76	14.17	0.08	83.28	
	ATMs / 100,000 adults adult	ATM	Uganda, Zambia,	17.28	19.12	0.58	106.88	
	ATMs /1,000 km2	ATM ^{SQ}	Algeria, Angola,	15.60	22.31	0.04	97.59	
Financial Usage	Outstanding loans	OL ^{CG}	Bangladesh, Benin, Bolivia, Cabo Verde,	37.00	32.55	1.75	222.17	0.2
	Outstanding deposits	OD ^{CB}	Cambodia,	44.87	35.15	7.93	243.79	
	Gross domestic savings	GDS	Cameroon, Côte	15.70	13.07	-34.55	48.45	
	Financial system deposits to GDP (%)	FSD	d'Ivoire, Egypt, El	41.51	27.92	8.16	154.29	
Infrastructure and Communication Technology	Services, value-added	SV	Salvador, Ghana, Honduras, India,	48.11	8.56	11.95	62.16	0.3
	Access to electricity (% of the population)	Elec	Indonesia, Kenya, Kyrgyz Republic,	63.98	29.77	9.70	100.00	
	Fixed broadband subscriptions (per 100 people)	FBS	Lesotho, Mauritania, Mongolia, Morocco,	2.12	3.05	0.00	18.62	
	Mobile cellular subscriptions (per 100 people)	MCS	Nepal, Nigeria, Pakistan, Philippines,	91.25	31.54	22.28	164.44	
Banking Cost	Bank cost-to-income ratio (%)	BCI	Senegal, Tunisia, Ukraine, Vietnam,	56.53	13.55	26.65	202.04	0.2
	Bank overhead costs to total assets (%)	BOC	Zimbabwe.	4.12	2.16	0.75	12.53	

Research Model

We used four endogenous variables related to single dimension index, And have presented the principal component's equation below:

$$Dm_i^{FA} = \alpha_1 ATM_i^{SQ} + \alpha_2 ATM_i + \alpha_3 CBB_i + \alpha_4 CBB_i^{SQ} + \epsilon_i$$

$$Dm_i^{FU} = \beta_1 OL_i^{CB} + \beta_2 GDS_i + \beta_3 FSD_i + \beta_4 OD_i^{CB} + v_i$$

$$Dm_i^{ICT} = \gamma_1 SV_i + \gamma_2 Elec_i + \gamma_3 FBS_i + \gamma_4 MCS_i + \Psi_i$$

$$Dm_i^{BC} = \sigma_1 BCI_i + \sigma_2 BOC_i + \Omega_i$$

Let $C_M(M * M)$ represents the correlation matrix for financial indicators related to the given dimensions.

$$Dm_i^{[FA,FU,ict,bc]} = \frac{\sum_{Q,n=1}^M \rho_V^{[FA,FU,ict,bc]} r_{ni}^{[FA,FU,ict,bc]}}{\sum_{Q,n=1}^M \rho_V^{[FA,FU,ict,bc]}}$$

Here we used $\rho(1, \dots, M)$ as V^{th} eigenvalue script, and V indicates the number of Principal Component, and indicators are the eigenvalue of the matrix. Therefore, M^{th} is the principal component based on the assumption $\rho_1 > \rho_2 > \rho_3 \dots \dots \rho_m$ and $r_{ni} = (N = 1 \dots \dots m)$. Hence $r_{ni} = iv\rho_V$ represents nth component and iv is the indicator of the matrix. In this study, we used four dimensions for developing the overall index. We also used the Euclidean Distance Method to estimate the distance between maximum and minimum dimension values.

We have presented the formula for the normalization below:

$$Dm_i^{[FA,FU,ict,bc]} = w_i \frac{V_i^{[FA,FU,ict,bc]} - V_{\min}^{[FA,FU,ict,bc]}}{V_{\max}^{[FA,FU,ict,bc]} - V_{\min}^{[FA,FU,ict,bc]}}$$

Here country values represent "i" and "w_i" which are the weights assigned to each dimension, while (Dm_i^{FA} , Dm_i^{FU} , Dm_i^{ict} and Dm_i^{bc}) refers to financial access, financial usage, infrastructure & communication technology, and banking cost. $V_i^{[FA,FU,ict,bc]}$ And $V_{\min}^{[FA,FU,ict,bc]}$ represents the lowest value. And $V_{\max}^{[FA,FU,ict,bc]}$ representing the highest value. We followed the methodology of Sarma (2012) to estimate the final index. We have presented the exact formula below:

$$I = \frac{1}{2} \times \frac{\sqrt{dm_{FA}^2 + dm_{FU}^2 + dm_{ict}^2 + dm_{bc}^2}}{\sqrt{w_{FA}^2 + w_{FU}^2 + w_{ict}^2 + w_{bc}^2}} \times \left(1 - \frac{\sqrt{(w_{FA} - dm_{FA})^2 + (w_{FU} - dm_{FU})^2 + (w_{ict} - dm_{ict})^2 + (w_{bc} - dm_{bc})^2}}{\sqrt{w_{FA}^2 + w_{FU}^2 + w_{ict}^2 + w_{bc}^2}} \right)$$

The study has divided FI Index into three categories:

1. Low FI index: 0-0.3.

- 2. Medium FI Index : 0.3-0.5.
- 3. High FI Index: 0.5-1.

Data Analysis and Discussion

This study has categorized the FI index into three levels for a comprehensive analysis. For example, the low FI countries have an index value ranging from 0 to 0.3. The medium FI countries have an index value range from 0.3 to 0.5. The higher FI countries have an index value ranging from 0.5 to 1.

Table 2 shows all countries’ average FI index values from 2010 to 2020. The average eleven-year index range is [0.0755 to 0.5835]. Ukraine has the highest average FI index, while Niger has the lowest FI. Table 3 shows the FI trend in LLMI Countries.

Table 2: Overall Financial Inclusion (FI) in Low and Lower-Middle-Income (LLMI) Countries

Rank	Countries	2010-2020	Rank	Countries	2010-2020	Rank	Countries	2010-2020
1	Ukraine	0.5835	14	Kyrgyz Republic	0.3598	27	Rwanda	0.2305
2	Cabo Verde	0.5661	15	Egypt, Arab Rep.	0.3397	28	Zambia	0.2222
3	El Salvador	0.5644	16	Nepal	0.3358	29	Lesotho	0.2185
4	Vietnam	0.4962	17	Mauritania	0.333	30	Cameroon	0.2182
5	Mongolia	0.4913	18	Cambodia	0.2913	31	Benin	0.2067
6	Bangladesh	0.4816	19	Pakistan	0.2807	32	Mali	0.2049
7	Philippines	0.4668	20	Nigeria	0.2776	33	Mozambique	0.202
8	Tunisia	0.459	21	Algeria	0.2776	34	Angola	0.1996
9	Indonesia	0.4586	22	Ghana	0.275	35	Guinea	0.1848
10	India	0.4421	23	Senegal	0.2625	36	Uganda	0.172
11	Morocco	0.4419	24	Zimbabwe	0.2517	37	Burkina Faso	0.162
12	Bolivia	0.3867	25	Côte d'Ivoire	0.2515	38	Madagascar	0.1361
13	Honduras	0.3849	26	Kenya	0.2412	39	Niger	0.0755

Table 3: Financial Inclusion (FI) Trends in Low and Lower-Middle-Income (LLMI) Countries

Countries	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	LFI	LFI	LFI	LFI	LFI	LFI	MFI	MFI	LFI	MFI	MFI
Angola	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Bangladesh	MFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI	HFI
Benin	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Bolivia	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	HFI
Burkina Faso	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Cabo Verde	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI
Cambodia	LFI	LFI	LFI	LFI	LFI	LFI	MFI	MFI	MFI	MFI	MFI
Cameroon	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Côte d'Ivoire	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Egypt, Arab Rep.	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
El Salvador	MFI	MFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI
Ghana	LFI	LFI	LFI	LFI	LFI	LFI	MFI	LFI	MFI	MFI	MFI
Guinea	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Honduras	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
India	MFI	MFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI
Indonesia	LFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI	HFI
Kenya	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Kyrgyz Republic	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
Lesotho	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Madagascar	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Mali	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Mauritania	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
Mongolia	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI	HFI	HFI
Morocco	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
Mozambique	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Nepal	LFI	LFI	LFI	LFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI
Niger	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Nigeria	MFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Pakistan	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	MFI
Philippines	MFI	MFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI
Rwanda	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Senegal	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Tunisia	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI
Uganda	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Ukraine	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI	HFI
Vietnam	MFI	MFI	MFI	MFI	MFI	MFI	HFI	HFI	HFI	HFI	HFI
Zambia	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI
Zimbabwe	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI	LFI

Source: adapted from various resources

The results show that six countries (i.e., India, Indonesia, Bangladesh, Vietnam, Philippines, and Mongolia) have raised their FI levels in the last five years (Refer to Table 3). Likewise, Algeria, Cambodia, Ghana, and Nepal have achieved medium FI over the last five years. The data explains that Ukraine, Cabo Verde, and El-Salvador belonging to lower middle-income countries during 2010-2020, have achieved higher FI levels. At the same time, three countries (i.e., Mongolia, Bangladesh, and Vietnam) are close to a higher financial level. Thirteen medium FI countries (i.e., Vietnam, Mongolia, Bangladesh, Philippines, Tunisia, Indonesia, India, Morocco, Honduras, Kyrgyz Republic, Egypt, Nepal, and Mauritania) belong to lower-middle-income countries and have index values ranging from 0.3 to 0.5.

Countries with low FI values (i.e., from 0.0 to 0.3 index) from 2010 to 2020 are as follows: Cambodia, Pakistan, Nigeria, Algeria, Ghana, Senegal, Zimbabwe, Côte d'Ivoire, Kenya, Rwanda, Zambia, Lesotho, Cameroon, Benin, Mali, Mozambique, Angola, Guinea, Uganda, Burkina Faso, Madagascar, and Nigeria. The improvement in FI will increase over time. But low-income and lower-middle-income economies have deteriorated due to insufficient income problems. As per index estimation, three out of 39 countries have crossed the threshold of high FI. However, the cost associated with the banking industry is still higher for LLMI countries than in other higher-income and developed countries.

The banking sector in LLMI countries is highly competitive. Therefore, to attract customers, the banking sectors in these countries offer many financial products. Consequently, individuals open multiple accounts without any purpose or keep switching from one financial institution to another. Government policies in these countries have short-term policies to increase FI. Table 4 shows the FI in the year 2019-2020.

Table 4: Countries' Financial Inclusion (FI) during 2019-2020

Countries	2019	2020	Countries	2019	2020	Countries	2019	2020
Algeria	0.3096	0.3163	Guinea	0.1914	0.1974	Nepal	0.4435	0.4820
Angola	0.1972	0.2399	Honduras	0.3956	0.3925	Niger	0.1010	0.1060
Bangladesh	0.5762	0.5998	India	0.5082	0.5224	Nigeria	0.2813	0.2756
Benin	0.2177	0.2216	Indonesia	0.5115	0.5131	Pakistan	0.3065	0.3059
Bolivia	0.4586	0.5240	Kenya	0.2762	0.2782	Philippines	0.5622	0.5611
Burkina Faso	0.1922	0.1819	Kyrgyz R.	0.4050	0.4047	Rwanda	0.2421	0.2245
Cabo Verde	0.5978	0.5848	Lesotho	0.2368	0.2409	Senegal	0.2852	0.2800
Cambodia	0.3740	0.4025	Madagascar	0.1499	0.1462	Tunisia	0.5070	0.5272
Cameroon	0.2336	0.2557	Mali	0.2242	0.2382	Uganda	0.1937	0.1870
Côte d'Ivoire	0.2818	0.2874	Mauritania	0.3747	0.3686	Ukraine	0.6102	0.6170

Egypt.	0.3744	0.3950	Mongolia	0.5228	0.5080	Vietnam	0.5723	0.5927
El Salvador	0.6247	0.6354	Morocco	0.4725	0.4906	Zambia	0.2405	0.2489
Ghana	0.3085	0.3006	Mozambique	0.2167	0.2172	Zimbabwe	0.2352	0.2045

The data in Table 4 shows Burkina Faso, Cabo Verde, Ghana, Honduras, Madagascar, Mauritania, Nigeria, Pakistan, Philippines, Senegal, and Uganda FI index declined in 2020 as compared to the preceding year.

Conclusion

This paper explored the level of FI for LLMI countries by combining the traditional methodologies of PCA and the Euclidean Distance Method to obtain the weight of the final index using a two-stage process. We estimated the dimensions of the FI index using the PCA method and obtained the weight to calculate the final index using the ED method. This study used four dimensions of FI, i.e. “financial access, financial usage, infrastructure & communication technology, and banking cost” in 39 LLMI countries during 2010-2020.

The findings of this study are that Cabo Verde, El Salvador, and Ukraine achieved high FI among 39 countries. Thirteen countries achieved medium FI: Vietnam, Mongolia, Bangladesh, Philippines, Tunisia, Indonesia, India, Morocco, Honduras, Kyrgyz Republic, Egypt, Nepal, and Mauritania. Countries having low FI are Cambodia, Pakistan, Nigeria, Algeria, Ghana, Senegal, Zimbabwe, Côte d'Ivoire, Kenya, Rwanda, Zambia, Lesotho, Cameroon, Benin, Mali, Mozambique, Angola, Guinea, Uganda, Burkina Faso, Madagascar, and Nigeria. On average, Ukraine has the highest FI, while Nigeria has the lowest. We found that many countries have raised the level of FI but still struggle to achieve a higher level. The results show that the “estimated index” of the targeted countries ranges from [0.05 to 0.635], which aligns with earlier studies like Sarma (2012) and Della-Peruta(2018), and Shen et al. (2021).

Policy Implications and Future Research

To monitor the level of FI in the country, the government must have a strategic framework for FI policies, also known as the National Financial Inclusion Strategy. FI policy must include initiating the development process of FI in the country. From a policy perspective, strong regulation for FI is mandatory for countries with unstable economic conditions, such as Ghana, which has an unsuitable economic condition for achieving FI. Digital FI includes individuals using electronic payment transfer systems such as mobile phones and the Internet. The inclusion strategy of Zimbabwe focuses on improving its banking system using digital technology.

Furthermore, Kenya initiated “MPesa” to expand financial access. The republics of Madagascar have used mobile networks, such as Orange, Telma, and Airtel, to promote FI. In Pakistan, the FI policy focuses on providing loans to farmers to improve their living standards. Guinea has focused on the microfinance sector to enhance FI. Rwanda has invested in the SME sector to expand financial coverage and the quality of banking services. This study has identified directions for future research. For instance, future studies can use this index to estimate the impact of FI on banking stability. This index also assesses FI’s risk factors and economic impact. Furthermore, future researchers can use updated data to examine the dynamic impact of FI in other domains.

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