Kepes
http://scholopress.com/kepes-journal

2023 Volume 21 Issue 3 pp. 379-392

Exploring the Paradoxical Link between Employee Loneliness and Employee Creativity in the Post-Pandemic

***Najib Bou Zakhem [1], Muhieddine Ramadan [2], Hala Baydoun [3], Amira Daouk [4], Sarah Chahine [5], Mabelle Al Haddad [6], Abir El Fawal [7], Nada Jabbour Al Maalouf [8]**

[1]PhD in Management, School of Business, Lebanese International University, Bekaa, Lebanon
[2]PhD in Finance, School of Business, Lebanese International University, Beirut, Lebanon
[3]PhD in Business Administration with Concentration in Accounting and Finance, School of Business, Lebanese International University, Bekaa, Lebanon
[4]PhD in Management, School of Business, Lebanese International University, Beirut, Lebanon
[5]PhD in Entrepreneurship, School of Business, Lebanese International University, Beirut, Lebanon
[6]PhD in Law, School of Business, Lebanese International University, Beirut, Lebanon
[7]PhD in Management, Assistant Professor, Faculty of Business Administration, Beirut Arab University, Tripoli, Lebanon
[8]PhD in Business Administration, Department of Business Administration, Modern University for Business and Science, Beirut, Lebanon

Abstract

This study investigates the paradoxical relationship between employee loneliness induced by the pandemic and subsequent creativity in the post-pandemic era. Mediating the link between loneliness and creativity, intrinsic motivation is examined alongside the moderating influence of self-efficacy. Data collected from 208 teachers in Lebanon was analyzed through the PLS-SEM. The results unveil a significant mediating effect of intrinsic motivation, shedding light on how pandemic-induced loneliness propels employees towards heightened creative output. Furthermore, self-efficacy is identified as a significant moderator, influencing the strength of the loneliness-creativity relationship. This study contributes to a profound understanding of the intricate interplay between emotional experiences, intrinsic motivation, and efficacy in shaping post-pandemic creativity among employees.

Keywords: Loneliness, Intrinsic motivation, Creativity, Self-efficacy, Post-pandemic

1. Introduction

The emergence of the COVID-19 pandemic catalyzed a shift in both individual lifestyles and the operational dynamics of organizations on a global scale. This unparalleled crisis prompted the swift implementation of unprecedented changes in various aspects of daily existence, while simultaneously introducing a myriad of challenges that scrutinized societal resilience, adaptive capacities, health, and well-being (Torales et al., 2020; Zakhem et al., 2022). The rapid integration of remote work arrangements, novel communication tools, and revised operational priorities represented just a fraction of the comprehensive adjustments organizations had

*Corresponding author

DOI https://doi.org/10.5281/zenodo.7936583#99

to make to navigate the pandemic's multifaceted impact (Kramer & Kramer, 2020).

Amidst these transformative changes, a noteworthy facet emerged in the form of isolation and loneliness (Hoffart et al., 2020). Loneliness is defined as an unfavorable emotional feeling which takes place when an individual's attained social relations do not fulfill his/her desires (Rook, 1984). According to Wright (2012), loneliness originates from environmental factors such as culture, organizational factors such as a bad organizational climate and improper co-worker support, as well as personal factors like pessimism and shyness. Thus, the colossal changes in work settings driven by the pandemic (e.g., telecommuting, unusual communication tools, new organizational priorities, social distancing requirements) have basically placed the social connections of the workforce in jeopardy and increased the chances of the occurrence of loneliness concomitant. As individuals were compelled to adhere to social distancing protocols and remote work setups, their social interactions and in-person connections underwent a remarkable decline. This surge in isolation not only highlighted the importance of social bonds but also underscored the profound implications of loneliness on individuals' psychological well-being.

In response to the pandemic's effects, an array of perspectives emerged. While some regarded the pandemic's disruptions as a clarion call to proactively reshape the future and cultivate greater preparedness for unforeseen challenges, others contemplated the deeper implications of the imposed isolation (Mawlawi et al., 2023). Current research on employee loneliness mainly focuses on the negative aspects of this emotional condition on employee well-being and performance (Gabriel, Lanaj, & Jennings, 2020; Anand & Mishra, 2019; Ozcelik & Barsade, 2018). However, little research has addressed the positive consequences of loneliness, namely employees' level of creativity (Peng, Chen, Xia, & Ran, 2017), especially in the post-pandemic age. The concept that loneliness could paradoxically yield positive outcomes is grounded in the notion that periods of solitude and introspection might foster new ways of thinking and problem-solving. The proposition that isolation could serve as a catalyst for creativity has gained momentum in recent discourse. Essentially, the sense of loneliness, when channeled constructively, could potentially encourage individuals to delve into their inner thoughts and imaginings, thus stimulating a surge of creative expression and innovative thinking.

This study reconciles with the call of Akkermans et al. (2020) for empirical research investigating the positive consequences of the career shocks spurred by COVID-19 on career outcomes. In light of the study conducted by Carnevale and Hatak (2020) in which they view workplace loneliness as one of the pandemic's negative career shocks, this research seeks to explain that employees who experienced the pertinent problem of loneliness during the pandemic might have started engaging in creative work activities in the post-pandemic. Another practical gap in the literature involves examining the function of intrinsic motivation on the linkage between employee loneliness and employee creativity (Peng et al., 2017). As such, our study seeks to fulfill this research gap by tackling the role of this critical factor that would help lonely employees who were subject to social distancing mandates and self-isolation decisions to develop or uphold creative work practices. Moreover, in compliance with the study conducted by Ritchie et al. (2020) on people's self-efficacy beliefs during the initial stages of the pandemic, it is deemed important to respond to the call of these scholars by examining whether employees would have the ability to maintain creative self-efficacy in the post-pandemic. In addition to the absence of robust literature on the relationship between employee loneliness and employee creativity, another research gap that this study aims to address is related to external validity. Most of the research revolving around workplace operational change and workplace loneliness has been investigated from a business context (Bouzakhem et al., 2023). However, the current study aims to examine the consequences of loneliness on the creativity of teachers working in the education sector. In this sense, our study will help explain whether the teaching practices of teachers have changed as a result of the pandemic. Based on the aforementioned, the following questions arise: "Has pandemic-induced loneliness caused employees with a high level of intrinsic motivation to become more creative in the post-pandemic?" Thus, our

study examines the relationship between employee loneliness and creativity from a new perspective following the consequences of the pandemic. We propose that despite the loss of social experiences repressed by the COVID-19 pandemic, lonely employees with a high level of intrinsic motivation have profoundly started focusing on novel job tasks and teaching approaches, hence maintaining ingenuity and creativity in their work practices in the post-pandemic. Our study also assumes that creative self-efficacy plays a significant role in the aforementioned relationship, because individuals who realize their creative potential will sustain their intrinsic motivation levels and generate innovative work outcomes.

2. Theoretical Background and Hypotheses Development

2.1 Employee Loneliness and Creativity

In the currently evolving work environment spurred by the COVID-19 pandemic, it is essential for organizations to effectively nurture employee creativity and innovation (Ramadan et al., 2023; Heinonen & Strandvik, 2020). Creativity denotes the development of pioneering and novel ideas that would help the firm succeed and gain a competitive advantage over its rivals (Hirst et al., 2009). As per Carnevale et al. (2017), creative behavior is a response to certain demands originating from the work environment. However, Eysenck (1993) emphasizes that creativity is the fruit of uncommon behaviors such as insanity. In this regard, Lim and Gleeson (2014) assure that although loneliness is a result of irregularities, it is not a form of psychological disorder but rather a state resulting from inconsistency between the expected and the perceived amounts of social interaction.

Alongside, Ozcelik et al (2018) consider workplace loneliness as an undesirable feeling prompted by the absence of social interaction in the workplace. Studies conducted on workplace loneliness contradict with each other in terms of the consequences of this social phenomenon on work outcomes. For instance, several researches articulate that loneliness negatively affects employee performance (Lam & Lau, 2012), work engagement (Jung et al., 2021), employee well-being (Chen et al., 2016; Newman & Sachs, 2020), and employee turnover intention (Golden et al., 2008). On the contrary, other studies highlight some worthwhile consequences for workplace loneliness. For example, an empirical research conducted in China assures that employees who experience loneliness at work tend to have higher levels of satisfaction and commitment toward their job (Chan & Qiu, 2011).

In light of the various studies which view employee loneliness as a troublesome organizational issue, Shalley (1991) assures that creativity is the yield of difficulties and challenges encountered at work in pursuit of the organizational goals and outcomes. This conforms to the study of Dutton et al. (2010) who accentuate that individuals who fall under the negatively categorized social identity groups (e.g., lonely employees) may augment positive aspects of their personality by minimizing the prominent attribute of their devalued identity. Other researchers further discuss how the lack of social coherence at work might result in satisfactory work outcomes. As such, Hawlina et al. (2019) view individual differences within the workforce as a trigger for creative outputs. This means that lonely employees will ignite interest in their job duties and tasks because they will have enough time to develop the skills and knowledge needed for generating new and novel ideas (Unsworth, 2001). In addition, creative efforts are not dependent upon social connections but rather upon the individuals' sense of identity which makes lonely employees who have a strong perception of their own identity as creative individuals (Farmer et al., 2003).

The organizational creativity theory provides a solid framework for understanding the aforesaid relationship between employee loneliness and creativity. This theory assumes that environmental forces within the organizational context play a significant role in influencing the creativity of both individuals and groups (Woodman et al., 1993). Since employee loneliness is deemed a result of organizational and structural factors leading employees to feel detached from the social group (Lam et al, 2012), it can be said that loneliness would yield positive and creative thoughts on both individual and group levels. Based on the

aforesaid, we suggest that loneliness encountered at work would help employees show deeper interest in their jobs and engage in creative activities.

Hypothesis 1. *Employee loneliness positively affects employee creativity*.

2.2 Employee Loneliness and Intrinsic Motivation:

Research on the relationship between employee loneliness and intrinsic motivation is very scarce. In their book on the human nature of lonely individuals, Cacioppo and Patrick (2008) clarify that social isolation and the absence of social connections are major determinants for loneliness. Based on this, we assume that studies explaining the impact of social disconnectedness on individuals' motivational level would help us understand the potential relationship between employee loneliness and intrinsic motivation. The majority of the studies conducted on the effects of loneliness show that this latter acts a major impediment for various individual and organizational outcomes including employee motivation (Vanhalst et al., 2018; Steinbauer et al., 2018; Ozcelik & Barsade, 2011). Consistently, Pereira et al. (2013) assure that social exclusion at the workplace is stressful and may extensively deplete self-regulatory resources of humans thus resulting in the loss of individuals' ability to regulate their behavior. On the contrary, some researchers have decided to confront the assumption that loneliness and social isolation necessarily lead to unfavorable work outcomes. For instance, Baumeister et al. (2005) argues that, based on theoretical grounds, individuals would unexpectedly react to social exclusion by improving their capabilities and reaching meaningful conclusions. This study is consistent with that of Richman and Leary (2009) who emphasize that under some circumstances, people who are socially isolated might have the internal drive to regulate their behavior and perform better than those who are not socially isolated. Furthermore, intrinsically motivated workers are captivated by their work and view it as an end-it-itself and never as means (Abuhamdeh & Csikszentmihalyi, 2012). These individuals are self-driven and independent, and they do not fundamentally depend on external validation (Ryan & Deci, 2000), which means that these lonely employees can be intrinsically motivated if they like independence by their nature and do not expect any form of external reward. Precisely, employees who relish a high level of intrinsic motivation may positively react to social isolation taking place at the workplace by giving greater focus to their work as a tactic to experience favorable and positive emotions (Koestner & Losier, 2002). Accordingly, we suggest that lonely employees might react positively to social isolation by giving greater internal focus to their job in order to attain meaningful work accomplishments.

Hypothesis 2. *Employee loneliness is positively related to employee intrinsic motivation.*

2.3 Intrinsic Motivation and Employee Creativity

Despite the fact that the different facets of employee creativity have been widely discussed by researchers and scholars (Byron et al., 2010), understanding creativity foundations and whether employees are able to maintain creativity levels in light of the COVID-19 pandemic is still needed (Mercier et al., 2021).

As previously mentioned, intrinsic motivation refers to the behavior that is directed by a self-reward and a strong valuation of individual investment (Bhatia et al., 2023; Fischer et al., 2019). The majority of the studies show that there is a positive association between intrinsic motivation and creativity (Elsbach & Hargadon, 2006). Besides, a number of meta-analyses reveal that the impact of intrinsic motivation on the creative activities of the individual is considerably positive and favorable (De Jesus et al., 2013; Liu et al., 2016).

Employees who are intrinsically motivated put abundant effort in their jobs because they show strong willingness to learn, elevated self-interest, and a high level of curiosity (Ryan & Deci, 2000). Some researchers such as Shalley et al. (2004) lay out other attributes of intrinsically motivated employees including risk-taking, flexibility, and determination which help in developing creative ideas and innovative practices. Similarly, the

creativity and innovation model developed by Amabile and Pratt (2016) theoretically illustrates the affirmative relationship between intrinsic motivation and creativity. Researchers recognize several potential reasons why intrinsically motivated individuals develop remarkable levels of creativity. For instance, some scholars who are concerned with studying human emotions suggest that intrinsic motivation fosters creativity through the escalation of the amount of cognitive information needed for embracing new ideas and the promotion of cognitive flexibility in framing and linking patterns of various ideas (Silvia, 2008; Grant & Berry, 2011). Such standpoint assures that intrinsic motivation augments fondness which in turn strengthens emotional engagement and the desire to spend more time and commitment toward the job (Oriol et al., 2016). Other scholars such as the self-determination researchers assure that intrinsically motivated individuals are creative because they accept risk and complexities and are eager to broaden their learning experience (Gagné & Deci, 2005). In this sense, the self-determination theory (SDT) aids in explaining how intrinsically motivated humans tend to have noticeable creativity levels. This theory articulates that humans have an innate positive tendency to attain development and growth (Ryan & Deci, 2000). This form of autonomous motivation which is distinctive in nature triggers positive outcomes because it allows self-determination. Likewise, Gagné et al. (2005) emphasize that, from the self-determination viewpoint, intrinsic motivation builds confidence which in turn encourages employees to carry on difficult, challenging, and new roles with high degree of concentration. Taking into consideration that creativity comprises the utilization of complex, challenging, and novel ideas (Škerlavaj et al., 2014), we consider that the self-determination theory supports our assumption that employee intrinsic motivation is positively related to employee creativity:

Hypothesis 3. *Employee intrinsic motivation is positively related to employee creativity.*

2.4 Moderating Role of Creative Self-Efficacy

In view of the challenges facing the employees' ability to maintain creative work during the COVID-19 pandemic (Chong et al., 2020), employees need a minimal level of internal force to engage in creative efforts during critical situations (Agarwal & Farndale, 2017). Vigorous efficacy beliefs play a significant role in enhancing the persistence capability and the coping attempts needed to face difficult circumstances (Chen & Zhang, 2019). Considering workplace loneliness as one of the challenging organizational situations that affect work outcomes (Jung et al., 2021), the social cognitive theory clearly explains how creative self-efficacy would buffer the relationship between employee loneliness and employee creativity. The social cognitive theory contemplates that humans are motivated based on their personal judgment regarding their ability to conduct specific duties as well as their expectations of the consequences of their actions (Bandura, 2001). In accordance with this theory, such judgments are influenced by the individuals' self-efficacy. This means that humans with considerable level of self-efficacy are confident about their abilities and view problems as challenges to be attained (Harrison et al., 1997). In this sense, these individuals tackle the challenges with more persistence as view them as goals to be accomplished. As a part of the self-efficacy concept, creative self-efficacy denotes the confidence that humans have along with the knowledge and skills required to achieve creative errands (Tierney & Farmer, 2011). More specifically, when expected to develop creative ideas especially under indispensable situations, people with high amount of creative self-efficacy dynamically employ such challenges in order to meet situational needs and demands. These individuals distinctively focus on ingenious cognitive processes for the sake of producing unusual ideas or keys (Tierney et al, 2011). Hence, people with significant levels of creative self-efficacy have the ability to attain goals confidently and in creative ways (Gong et al., 2009). Accordingly, we suggest that creative self-efficacy buffers the relationship between employee loneliness and employee creativity so that when lonely employees naturally enjoy considerable amounts of creative self-efficacy, this will help them sustain their ability to engage in worthwhile ideas.

Hypothesis 4. *Creative self-efficacy moderates the relationship between employee loneliness and employee creativity.*

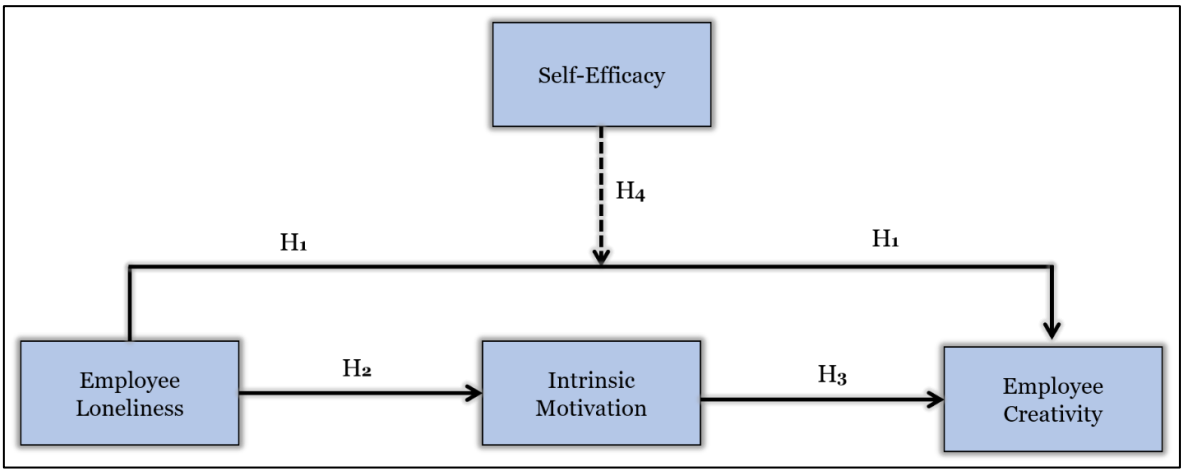

Fig. 1 Theoretical Model

3. Methodology

3.1 Sampling and Data Collection

This study utilizes the convenience sampling technique and embraces a quantitative methodology for gathering and interpreting data. The determination of the sample size utilized G*power software, with an effect size of 0.01 and a statistical power of 80%, in line with recommendations by Faul et al. (2007) and Hair et al. (2017). A substantial Min R^2 of 0.10 and α of 0.01 were set. The calculated range, falling between 147 and 179, implies that a sample size exceeding 179 participants is deemed acceptable for result analysis and drawing generalizable conclusions. Data were gathered through an online questionnaire, employing a cross-sectional time horizon, from teachers working at different schools and educational institutions in Lebanon. The selection of teachers working within educational institutions in Lebanon as the target sample for this study is strategically grounded in several compelling reasons. Firstly, educational institutions have undergone a remarkable transformation during the pandemic, with the adoption of remote teaching methods and virtual classrooms becoming essential to ensure continuity in education. As the pandemic-induced challenges profoundly impacted the education sector, investigating the experiences of teachers can offer unique insights into the intersection of employee loneliness and its potential positive impact on creativity within a post-pandemic context. Secondly, teachers play a vital role in shaping future generations, making their experiences and well-being integral to the overall quality of education provided. Exploring the relationship between employee loneliness and creativity among teachers is particularly pertinent due to the substantial shifts in their work environment, as well as the distinct demands placed upon them. By understanding how teachers' experiences of loneliness during the pandemic relate to their creative practices, this study can provide valuable implications for optimizing teaching methods and fostering innovative approaches that enhance the learning experience in the aftermath of the pandemic. Additionally, the Lebanese context presents a specific set of challenges due to the nation's unique sociopolitical and economic circumstances. The educational sector, like other industries, has been significantly impacted by these challenges, potentially exacerbating feelings of isolation and loneliness among teachers. By focusing on teachers within Lebanon, this study can contribute to addressing the implications of employee loneliness for a critical workforce segment within a distinctive cultural and socioeconomic context. To ensure the reliability and validity of the research instrument and its items, a pilot test was conducted on a sample of 25 teachers. Necessary adjustments were incorporated before the actual data collection process. The questionnaire was distributed among 420 teachers, and the overall response rate amounted to 50.47%, with 212 returned questionnaires. Four responses were excluded to mitigate research errors, resulting in a total of 208 valid responses. Confidentiality and anonymity were ensured to foster truthful responses. Collinearity was confirmed, with VIF less than 3.3, to assure model accuracy, thereby addressing concerns of method bias (Kock, 2015; Podsakoff

et al., 2003). The participants were made aware of the study's objectives and their voluntary involvement, along with the option to withdraw their participation whenever they chose.

3.2 Measurements

The questionnaire items were evaluated using a 5-point Likert scale ranging from 1, indicating "Strongly Disagree," to 5, indicating "Strongly Agree." The questions in the survey employed for this study were taken from established research and validated measurement tools. To assess employee loneliness, five items were utilized, adapted from Sullivan & Bendell (2023). With regard to intrinsic motivation, six items were chosen based on the research conducted by Buil et al. (2019). Measurement of employee creativity was based on the scale comprised of five items developed by Jyoti & Dev (2015). Lastly, the measurement of self-efficacy was sourced from a four-item scale introduced by Scherbaum et al. (2006). The validity and reliability of these measures were assessed and the results are detailed below.

3.3 Analysis

To analyze the proposed research model outlined in Fig. 1, the researchers employed Partial Least Squares Structural Equation Modeling (PLS-SEM). This choice was guided by the existence of latent variables within the model. Moreover, the necessity for a normally distributed dataset was not a concern, and achieving statistical significance could be realized with a smaller sample size, consistent with the findings by Hair et al. (2017).

4. Results

Table 1 showcases the HTMT ratios, employed to assess the discriminant validity (i.e. the degree to which different constructs or variables in a study are distinct from one another) by estimating the correlation existing among the constructs. The findings from Table 2 reveal that the outer loadings for all constructs within the study framework exceed 0.7. Furthermore, the values for α, Rho A, and CR exceed the threshold value of 0.7 yet remain below 0.9, in line with established standards (Jöreskog, 1971; Hair et al., 2019). Moreover, the AVE exceeds 0.5, indicating satisfactory convergent validity. This aligns with the HTMT values shown in Table 1, all of which are under 0.85 and signal acceptable discriminant validity (Henseler, Ringle, & Sarstedt, 2015; Hair et al., 2017). Collectively, these outcomes affirm the model's suitability for progressing into subsequent phases of data analysis.

Table 1 Heterotrait-Monotrait ratio (HTMT)

	ELON	INMO	EMCR
INMO	0.735		
EMCR	0.628	0.607	
SEFC	0.709	0.641	0.755

The analysis of the study's structural framework is performed, and the outcomes are verified as depicted in Table 3. In this regard, the values of NFI (0.907), SRMR (0.022), and VIF are lower than 3.0, indicating the absence of any problems related to multicollinearity. Hence, the outcomes showcased in Table 3 depict a well-fitting statistical model. Moreover, the R^2 and Q^2 values indicate strong results in terms of the in-sample relevance and predictive validity, as directed by Hair et al. (2019) and Henseler et al. (2014), hence indicating a well-fitting statistical model.

Table 2 Measurement Model

Constructs	Indicators	Outer Loadings	Alpha	Rho A	Composite Reliability	Average Variance Extracted
Employee Loneliness	ELON1	0.799	0.794	0.845	0.762	0.741
	ELON2	0.871				
	ELON3	0.858				
	ELON4	0.708				
	ELON5	0.916				
Intrinsic Motivation	INMO1	0.705	0.841	0.832	0.840	0.733
	INMO2	0.822				
	INMO3	0.878				
	INMO4	0.736				
	INMO5	0.833				
	INMO6	0.707				
Employee Creativity	EMCR1	0.820	0.878	0.885	0.839	0.596
	EMCR2	0.855				
	EMCR3	0.716				
	EMCR4	0.831				
	EMCR5	0.809				
Self-Efficacy	SEFC1	0.875	0.794	0.775	0.713	0.699
	SEFC2	0.894				
	SEFC3	0.711				
	SEFC4	0.853				

Table 3 Structural Model and Hypothesis Testing

Effects	Relations	β	t-statistics	f^2	Decision
Direct					
Hypothesis 1	ELON → EMCR	0.225	4.573***	0.129	Supported
Hypothesis 2	ELON → INMO	0.361	5.618***	0.138	Supported
Hypothesis 3	INMO → EMCR	0.227	2.751**	0.081	Supported
Interaction					
Hypothesis 4	ELON x SEFC → EMCR	0.338	1.223*	0.165	Supported
SRMR: 0.022; NFI: 0.907 R^2_{OAG} = 0.31 / Q^2_{OAG} = 0.21 R^2_{DTR} = 0.49 / Q^2_{DTR} = 0.25 R^2_{BMI} = 0.75 / Q^2_{BMI} = 0.43					

*0.05, **0.01, ***0.001

Moreover, as per the results illustrated in Table 3, the direct and significant positive influence of employee loneliness (ELON) on employee creativity (EMCR) is proven (β= 0.225), indicating acceptance for the first hypothesis (H_1). Moreover, the relationship between employee loneliness (ELON) and intrinsic motivation (INMO) is determined to hold statistical significance (β= 0.361), indicating confirmation for the second hypothesis (H_2). In addition, the relationship between intrinsic motivation (INMO) and employee creativity (EMCR) also indicates significance (β= 0.227) and support for the third hypothesis (H_3). Lastly, the moderating role of self-efficacy (SEFC) is also found to have a statistical significance (β= 0.338), consequently leading to the validation of the fourth hypothesis (H_4).

5. Discussion & Conclusions

The findings of this study extend the existing literature on the impact of the COVID-19 pandemic on employee intrinsic motivation and employee creativity. As anticipated, our results reveal a significant link between loneliness induced by the pandemic and heightened intrinsic motivation among employees. This aligns with prior research that has shown how adverse circumstances can prompt individuals to seek internal sources of fulfillment, such as engaging in creative endeavors, as a coping mechanism. The paradoxical relationship observed here, where a negative emotional state like loneliness triggers positive outcomes like creativity, sheds light on the complexity of human psychology and adaptation to challenging situations.

Our study's identification of intrinsic motivation as a mediator between pandemic-induced loneliness and post-pandemic creativity offers a crucial insight into the underlying mechanisms at play. This implies that employees who felt isolated during the pandemic were more likely to tap into their internal drive to create, innovate, and find new solutions. This result resonates with theories emphasizing the role of psychological needs satisfaction in fostering creativity, as individuals driven by intrinsic motives are more likely to explore novel ideas and approaches.

Furthermore, our investigation reveals an intriguing moderating role of self-efficacy in the relationship between loneliness and creativity. The extent to which loneliness stimulates creativity is contingent upon an individual's self-efficacy beliefs, suggesting that individuals with higher levels of self-efficacy might harness their loneliness-induced intrinsic motivation more effectively to drive creative outcomes.

The implications of these findings extend beyond the theoretical realm and hold practical significance for various stakeholders. Firstly, for managers, recognizing the potential positive aspect of loneliness-induced intrinsic motivation can lead to tailored interventions that channel employee energy into creative outlets. Encouraging skill development, providing flexible project assignments, and fostering an environment that values experimentation and risk-taking could be effective strategies to harness this latent creativity.

For school principals, the study suggests the importance of addressing teachers' feelings of isolation in a holistic manner. Acknowledging the emotional toll of the pandemic and offering platforms for creative expression can not only mitigate negative effects but also promote adaptive responses. Schools can become spaces where loneliness acts as a catalyst for creative growth rather than a hindrance.

Finally, employees themselves can leverage these findings by understanding the potential upsides of their emotional experiences. Seeking out opportunities for self-expression, skill enhancement, and collaboration can serve as effective outlets for converting pandemic-induced loneliness into a productive force for personal and professional growth.

In conclusion, this study adds to the growing body of research indicating that the COVID-19 pandemic's effects reach far beyond immediate health concerns. Loneliness, often seen as a negative byproduct of pandemic-induced isolation, can paradoxically fuel intrinsic motivation and subsequent creativity among employees. The presence of self-efficacy as a moderating factor further nuances this relationship. These findings underscore the resilience and adaptability of individuals facing adversity, showcasing the potential for transformation even in challenging circumstances.

As society transitions into the post-pandemic age, it is imperative for managers, school principals, and employees to recognize the potential positive outcomes embedded within the challenges. This can be achieved by fostering a supportive and flexible environment that encourages innovation, risk-taking, and collaboration. By embracing the paradox of loneliness-triggered creativity, stakeholders can not only mitigate the negative consequences of pandemic-induced isolation but also harness the potential for growth and renewal.

In a broader sense, this study highlights the intricate interplay between emotions, motivation, and creativity, offering a glimpse into the remarkable complexity of human behavior. As we continue to navigate

uncertain times, understanding and capitalizing on these dynamics, including the moderating role of self-efficacy, will be pivotal for fostering individual and collective well-being, enabling us to emerge from the pandemic era not only stronger but also more creatively enriched.

6. Limitations and Future Research

While this study makes a significant contribution by illuminating the intricate relationship between pandemic-induced loneliness, intrinsic motivation, and post-pandemic creativity, several limitations warrant consideration. The sample's industry-specific focus (i.e. school teachers) and cross-sectional design may hinder broader generalizability and causal inferences. The reliance on self-report measures, without the incorporation of qualitative data, potentially obscures nuanced insights that could be extracted from open-ended interviews. Future research endeavors should contemplate the integration of mixed-method approaches, incorporating qualitative interviews alongside quantitative measures, to provide a more inclusive understanding of the paradox and the underlying psychological mechanisms. Lastly, the study indicates partial mediation for intrinsic motivation, highlighting the need to examine other variables that might serve as mediators in the aforementioned relationship.

Authors Contribution

All authors contributed equally to this research work.

Funding Information

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Conflict

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Abuhamdeh, S., & Csikszentmihalyi, M. (2012). The importance of challenge for the enjoyment of intrinsically motivated, goal-directed activities. *Personality and social psychology bulletin*, *38*(3), 317-330. https://doi.org/10.1177/0146167211427147
2. Agarwal, P., & Farndale, E. (2017). High-performance work systems and creativity implementation: the role of psychological capital and psychological safety. *Human Resource Management Journal*, *27*(3), 440-458. https://doi.org/10.1111/1748-8583.12148
3. Akkermans, J., Richardson, J., & Kraimer, M. (2020). The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *Journal of Vocational Behavior*. https://doi:10.1016/j.jvb.2020.103434
4. Amabile, T. M., & Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in organizational behavior*, *36*, 157-183. https://doi.org/10.1016/j.riob.2016.10.001
5. Anand, P., & Mishra, S. K. (2019). Linking core self-evaluation and emotional exhaustion with workplace loneliness: does high LMX make the consequence worse?. *The International Journal of Human Resource Management*, 1-26. https://doi.org/10.1080/09585192.2019.1570308
6. Andel, S. A., Shen, W., & Arvan, M. L. (2021). Depending on your own kindness: The moderating role of self-compassion on the within-person consequences of work loneliness during the COVID-19 pandemic. *Journal of Occupational Health Psychology*. https://doi.org/10.1037/ocp0000271
7. Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology*, *52*(1), 1-26. https://doi.org/10.1146/annurev.psych.52.1.1

8. Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology*, 88(4), 589-604. https://doi.org/10.1037/0022-3514.88.4.589
9. Bhatia, N., Sharma, S. K., & Ganguly, C. (2023). Compensation and Reward Management within Domestic & International Airlines. *Kepes*, 21(3), 190-202.
10. Bouzakhem, N., Farmanesh, P., Zargar, P., Ramadan, M., Baydoun, H., Daouk, A., & Mouazen, A. (2023). Rebuilding the Workplace in the Post-Pandemic Age through Human Capital Development Programs: A Moderated Mediation Model. *Administrative Sciences*, 13(7), 164. https://doi.org/10.3390/admsci13070164
11. Buil, I., Catalán, S., & Martínez, E. (2019). Encouraging intrinsic motivation in management training: The use of business simulation games. *The International Journal of Management Education*, 17(2), 162-171.
12. Byron, K., Khazanchi, S., & Nazarian, D. (2010). The relationship between stressors and creativity: a meta-analysis examining competing theoretical models. *Journal of Applied Psychology*, *95*(1), 201. https://doi.org/10.1037/a0017868
13. Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. WW Norton & Company.
14. Carnevale, J. B., & Hatak, I. (2020). Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *Journal of Business Research*, *116*, 183-187. https://doi.org/10.1016/j.jbusres.2020.05.037
15. Carnevale, J. B., Huang, L., Crede, M., Harms, P., & Uhl-Bien, M. (2017). Leading to stimulate employees' ideas: A quantitative review of leader–member exchange, employee voice, creativity, and innovative behavior. *Applied Psychology*, *66*(4), 517-552. https://doi.org/10.1111/apps.12102
16. Chan, S. H., & Qiu, H. H. (2011). Loneliness, job satisfaction, and organizational commitment of migrant workers: Empirical evidence from China. *The International Journal of Human Resource Management*, *22*(05), 1109-1127. https://doi.org/10.1080/09585192.2011.556785
17. Chen, Y., & Zhang, L. (2019). Be creative as proactive? The impact of creative self-efficacy on employee creativity: a proactive perspective. *Current Psychology*, *38*(2), 589-598. https://doi.org/10.1007/s12144-017-9721-6
18. Chen, Y., Wen, Z., Peng, J., & Liu, X. (2016). Leader-follower congruence in loneliness, LMX and turnover intention. *Journal of Managerial Psychology, 31*(4), 864-879. https://doi.org/10.1108/JMP-06-2015-0205
19. Chong, S., Huang, Y., & Chang, C. H. D. (2020). Supporting interdependent telework employees: A moderated-mediation model linking daily COVID-19 task setbacks to next-day work withdrawal. *Journal of Applied Psychology*, *105*(12), 1408. https://doi.org/10.1037/apl0000843
20. De Jesus, S. N., Rus, C. L., Lens, W., & Imaginário, S. (2013). Intrinsic motivation and creativity related to product: A meta-analysis of the studies published between 1990–2010. *Creativity Research Journal*, *25*(1), 80-84. https://doi.org/10.1080/10400419.2013.752235
21. Dutton, J. E., Roberts, L. M., & Bednar, J. (2010). Pathways for positive identity construction at work: Four types of positive identity and the building of social resources. *Academy of management review*, *35*(2), 265-293. https://doi.org/10.5465/amr.35.2.zok265
22. Eysenck, H. J. (1993). Creativity and personality: Suggestions for a theory. *Psychological inquiry*, *4*(3), 147-178. https://doi.org/10.1207/s15327965pli0403_1
23. Farmer, S. M., Tierney, P., & Kung-Mcintyre, K. (2003). Employee creativity in Taiwan: An application of role identity theory. *Academy of management Journal*, *46*(5), 618-630. https://doi.org/10.5465/30040653
24. Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, 39(2), 175-191.
25. Fischer, C., Malycha, C. P., & Schafmann, E. (2019). The influence of intrinsic motivation and synergistic extrinsic motivators on creativity and innovation. *Frontiers in psychology*, *10*, 137. https://doi.org/10.3389/fpsyg.2019.00137
26. Gabriel, A. S., Lanaj, K., & Jennings, R. E. (2020). Is one the loneliest number? A within-person examination of the adaptive and maladaptive consequences of leader loneliness at work. *Journal of Applied Psychology*. Advance online publication. https://doi.org/10.1037/apl0000838

27. Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational behavior*, *26*(4), 331-362. https://doi.org/10.1002/job.322
28. Golden, T. D., Veiga, J. F., & Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter? *Journal of Applied Psychology*, *93*(6), 1412. https://doi.org/10.1037/a0012722
29. Gong, Y., Huang, J. C., & Farh, J. L. (2009). Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. *Academy of management Journal*, *52*(4), 765-778. https://doi.org/10.5465/amj.2009.43670890
30. Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity. *Academy of management journal*, *54*(1), 73-96. https://doi.org/10.5465/amj.2011.59215085
31. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24.
32. Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). Advanced issues in partial least squares structural equation modeling. saGe publications.
33. Harrison, A. W., Rainer Jr, R. K., Hochwarter, W. A., & Thompson, K. R. (1997). Testing the self-efficacy—performance linkage of social—cognitive theory. *The Journal of social psychology*, *137*(1), 79-87. https://doi.org/10.1080/00224549709595415
34. Hawlina, H., Gillespie, A., & Zittoun, T. (2019). Difficult differences: A socio-cultural analysis of how diversity can enable and inhibit creativity. *The Journal of Creative Behavior*, *53*(2), 133-144. https://doi.org/10.1002/jocb.182
35. Heinonen, K., & Strandvik, T. (2020). Reframing service innovation: COVID-19 as a catalyst for imposed service innovation. *Journal of Service Management*, *32*(1), 101-112. https://doi.org/10.1108/JOSM-05-2020-0161
36. Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., ... & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational research methods*, 17(2), 182-209.
37. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43, 115-135.
38. Hirst, G., Van Knippenberg, D., & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal orientation, team learning behavior, and individual creativity. *Academy of management journal*, *52*(2), 280-293. https://doi.org/10.5465/amj.2009.37308035
39. Hoffart, A., Johnson, S. U., & Ebrahimi, O. V. (2020). Loneliness and social distancing during the COVID-19 pandemic: Risk factors and associations with psychopathology. *Frontiers in Psychiatry*, *11*, 1297. https://doi.org/10.3389/fpsyt.2020.589127
40. Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika*, 36(4), 409-426.
41. Jung, H. S., Song, M. K., & Yoon, H. H. (2021). The Effects of Workplace Loneliness on Work Engagement and Organizational Commitment: Moderating Roles of Leader-Member Exchange and Coworker Exchange. *Sustainability*, *13*(2), 948. https://doi.org/10.3390/su13020948
42. Jyoti, J., & Dev, M. (2015). The impact of transformational leadership on employee creativity: the role of learning orientation. *Journal of Asia Business Studies*, 9(1), 78-98.
43. Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. International Journal of e-Collaboration (ijec), 11(4), 1-10.
44. Koestner, R., & Losier, G. F. (2002). *Distinguishing three ways of being highly motivated: A closer look at introjection, identification, and intrinsic motivation.* In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (p. 101–121). University of Rochester Press.
45. Kramer, A., & Kramer, K. Z. (2020). The potential impact of the COVID-19 pandemic on occupational status, work from home, and occupational mobility. *Journal of Vocational Behavior*. Advance online publication. http://dx.doi.org/10.1016/j.jvb.2020.103442

46. Lam, L. W., & Lau, D. C. (2012). Feeling lonely at work: investigating the consequences of unsatisfactory workplace relationships. *The International Journal of Human Resource Management*, *23*(20), 4265-4282. https://doi.org/10.1080/09585192.2012.665070
47. Lim, M. H., & Gleeson, J. F. (2014). Social connectedness across the psychosis spectrum: current issues and future directions for interventions in loneliness. *Frontiers in psychiatry*, *5*, 154. https://doi.org/10.3389/fpsyt.2014.00154
48. Liu, D., Jiang, K., Shalley, C. E., Keem, S., & Zhou, J. (2016). Motivational mechanisms of employee creativity: A meta-analytic examination and theoretical extension of the creativity literature. *Organizational Behavior and Human Decision Processes*, *137*, 236-263. https://doi.org/10.1016/j.obhdp.2016.08.001
49. Mawlawi, A., El Fawal, A., Ibrahim, G., Ramadan, M., Baydoun, H., Massoud, M., ... & Yassine, D. (2023). Factors Influencing Online Shopping Intentions In The Post-Pandemic Era: A Retrospective Study Among Lebanese. *Journal of Namibian Studies: History Politics Culture*, 35, 171-204. https://doi.org/10.59670/jns.v35i.2985
50. Mercier, M., Vinchon, F., Pichot, N., Bonetto, E., Bonnardel, N., Girandola, F., & Lubart, T. (2021). COVID-19: A Boon or a Bane for Creativity?. *Frontiers in psychology*, *11*, 3916. https://doi.org/10.3389/fpsyg.2020.601150
51. Newman, D. B., & Sachs, M. E. (2020). The Negative Interactive Effects of Nostalgia and Loneliness on Affect in Daily Life. *Frontiers in psychology*, *11*, 2185. https://doi.org/10.3389/fpsyg.2020.02185
52. Oriol, X., Amutio, A., Mendoza, M., Da Costa, S., & Miranda, R. (2016). Emotional creativity as predictor of intrinsic motivation and academic engagement in university students: the mediating role of positive emotions. *Frontiers in psychology*, *7*, 1243. https://doi.org/10.3389/fpsyg.2016.01243
53. Ozcelik, H., & Barsade, S. G. (2018). No employee an island: Work loneliness and job performance. *Academy of Management Journal*, 61, 2343–2366. https://doi.org/10.5465/amj.2015.1066
54. Ozcelik, H., & Barsade, S. (2011). Work loneliness and employee performance. In *Academy of management proceedings* (Vol. 2011, No. 1, pp. 1-6). Briarcliff Manor, NY 10510: Academy of Management. https://doi.org/10.5465/ambpp.2011.65869714
55. Peng, J., Chen, Y., Xia, Y., & Ran, Y. (2017). Workplace loneliness, leader-member exchange and creativity: The cross-level moderating role of leader compassion. *Personality and Individual Differences*, *104*, 510-515. https://doi.org/10.1016/j.paid.2016.09.020
56. Pereira, D., Meier, L. L., & Elfering, A. (2013). Short-term effects of social exclusion at work and worries on sleep. *Stress and Health*, *29*(3), 240-252. https://doi.org/10.1002/smi.2461
57. Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
58. Ramadan, M., Bou Zakhem, N., Baydoun, H., Daouk, A., Youssef, S., El Fawal, A., ... & Ashaal, A. (2023). Toward Digital Transformation and Business Model Innovation: The Nexus between Leadership, Organizational Agility, and Knowledge Transfer. *Administrative Sciences*, 13(8), 185. https://doi.org/10.3390/admsci13080185
59. Ritchie, L., Cervone, D., & Sharpe, B. T. (2020). Goals and Self-Efficacy Beliefs During the Initial COVID-19 Lockdown: A Mixed Methods Analysis. *Frontiers in Psychology*, *11*. Doi:10.3389/fpsyg.2020.559114
60. Rook, K. S. (1984). The negative side of social interaction: impact on psychological well-being. *Journal of personality and social psychology*, *46*(5), 1097. https://doi.org/10.1037/0022-3514.46.5.1097
61. Ryan, R. M. and Deci, E. L. (2000), "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being", *American Psychologist*, Vol. 55 No.1, pp.68-78. https://doi.org/10.1037110003-066X.55.1.68
62. Scherbaum, C. A., Cohen-Charash, Y., & Kern, M. J. (2006). Measuring general self-efficacy: A comparison of three measures using item response theory. *Educational and psychological measurement*, 66(6), 1047-1063.
63. Shalley, C. E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied psychology*, *76*(2), 179. https://doi.org/10.1037/0021-9010.76.2.179
64. Shalley, C. E., Zhou, J., and Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, Vol. 30 No.6, pp.933-958 https://doi.org/10.1016/j.jm.2004.06.007

65. Silvia, P. (2008), “Interest: The curious emotion”, Current Directions in Psychological Science, Vol. 17 No. 1, pp. 57-60. https://doi.org/10.1111/j.1467-8721.2008.00548.x
66. Škerlavaj, M., Černe, M., & Dysvik, A. (2014). I get by with a little help from my supervisor: Creative-idea generation, idea implementation, and perceived supervisor support. *The Leadership Quarterly*, *25*(5), 987-1000. https://doi.org/10.1016/j.leaqua.2014.05.003
67. Smart Richman, L., & Leary, M. R. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: a multimotive model. *Psychological review*, *116*(2), 365. https://doi.org/10.1037/a0015250
68. Steinbauer, R., Renn, R. W., Chen, H. S., & Rhew, N. (2018). Workplace ostracism, self-regulation, and job performance: Moderating role of intrinsic work motivation. *The Journal of social psychology*, *158*(6), 767-783. https://doi.org/10.1080/00224545.2018.1424110
69. Sullivan, D. M., & Bendell, B. L. (2023). Help: Lonely at work! Managerial interventions to combat employee loneliness. *Business Horizons*.
70. Tierney, P., & Farmer, S. M. (2011). Creative self-efficacy development and creative performance over time. *Journal of applied psychology*, *96*(2), 277. https://doi.org/10.1037/a0020952
71. Torales, J., O’Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. *International Journal of Social Psychiatry*, *66*(4), 317-320. doi.org/10.1177/0020764020915212
72. Unsworth, K. (2001). Unpacking creativity. *Academy of management review*, *26*(2), 289-297. https://doi.org/10.5465/amr.2001.4378025
73. Vanhalst, J., Luyckx, K., Van Petegem, S., & Soenens, B. (2018). The detrimental effects of adolescents’ chronic loneliness on motivation and emotion regulation in social situations. *Journal of youth and adolescence*, *47*(1), 162-176. https://doi.org/10.1007/s10964-017-0686-4
74. Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of management review*, *18*(2), 293-321. https://doi.org/10.5465/amr.1993.3997517
75. Wright, S. (2012). Is it lonely at the top? An empirical study of managers’ and nonmanagers’ loneliness in organizations. *The Journal of psychology*, *146*(1-2), 47-60. https://doi.org/10.1080/00223980.2011.585187
76. Zakhem, N. B., Farmanesh, P., Zargar, P., & Kassar, A. (2022). Wellbeing during a pandemic: An empirical research examining autonomy, work-family conflict and informational support among SME employees. *Frontiers in Psychology*, 13, 890265. https://doi.org/10.3389/fpsyg.2022.890265