

-RESEARCH ARTICLE-

TRANSFORMING PUBLIC SECTOR THROUGH TECHNOLOGY: EXAMINING HOW DIGITAL HRM, DIGITAL LEADERSHIP, EMPLOYEE ENGAGEMENT, AND ORGANIZATIONAL PERFORMANCE INTERPLAY

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—Abstract—

The current study investigated the nexus among digital HRM, Digital leadership, Employee Engagement and Organizational performance. Therein, the study examined to address critical scholarly gaps pertaining to the mediation and sequential pathways in the Digital HRM and organizational performance relationship. Through using structured equation modeling, data obtained through self-administered questionnaires from 371 mid-level employees from the banking sector of Bahrain were analyzed. The

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results concluded that employee engagement mediated the Digital HRM and organizational performance association. Accordingly, the results also confirmed the mediation of Digital leadership in the digital HRM and organizational performance association. Importantly, the study also found statistical results confirming the sequential mediation of Digital Leadership and employee engagement in the relationship between Digital HRM and organizational performance. The study offers notable implications for theory and practice suggesting that boosting organizational performance requires investments in the digitization of organizational systems particularly those connected with HRM alongside tech-savvy leadership that could energize employees to work with immersion for better results.

Keywords: Technology, Digital HRM, Digital Leadership, Organizational Performance, Employee Engagement.

INTRODUCTION

The rapid advances in technology have principally revolutionized the way business' function. Across both public and private sectors, business entities are heavily investing in boosting their digital capabilities to foster operational excellence, improve service delivery, and maintain a competitive edge across the highly dynamic markets of the current era. In this, human resources management (HRM) has witnessed a considerable shift from traditional administrative processes to digital systems. Through these systems, organizations can boost work efficiency by streamlining work processes, enhancing employee experiences, and offering data-driven decision making in employee matters ([Chin et al., 2024](#)). However, despite the growing investments in HRM systems, the extent to which it translates into improved organizational performance remains vague. Extant research indicates that digital HRM can boost organizational agility and innovation ([Mahmoud et al., 2025](#)); some scholars also argue that this may not be feasible without strong leadership support ([Held et al., 2026](#)). This hence indicates the need to examine the intervening factors through which digital HRM influences end results.

In parallel, digital leadership has turned out to be a critical prospect for organizational capability as it fosters the utilization of digital technologies, cultivates a culture of innovation, and helps guide employees through technological transformation ([Rojak, 2025](#)). Leaders with digital capabilities and skills are more capable of aligning technological initiatives with organizational goals and strategies, and motivating employees for the adoption of digital transformation. Thus, the current study aimed to investigate whether digital leadership brings that inner connectivity in the digital HRM and organizational performance association. Accordingly, employee engagement has also gained scholarly attention, particularly from individuals enthusiastic about technology, leadership, and organizational performance ([Damayanti, 2026](#); [Prentice et](#)

al., 2023). Research has shown that boosting organizational performance requires highly work-immersed and dedicated individuals, who, in other words, are called engaged employees (Al-Romeedy et al., 2025). Studies outline that digital HRM can harness engagement levels (Ayanponle et al., 2024); however, to what extent digital leadership and employee engagement can interplay in the digital HRM and organizational performance nexus remains unclear. Therefore, the current study also aspired to examine how these factors function as sequential prospects. Overall, the current study aimed to address the following three research questions:

1. RQ1: Can digital leadership mediate the relationship between digital HRM and organizational performance?
2. RQ2: Is there any mediating role of employee engagement in the digital HRM and organizational performance association?
3. RQ3: Can digital leadership and employee engagement sequentially mediate the digital HRM and organizational performance association?

The current study is based on two theoretical concepts, namely dynamic capabilities theory and the resource-based view (RBV). RBV highlights how capitalizing on resources can meaningfully help in developing major capabilities by improving processes (such as digital HR transformation) (Lockett et al., 2009; Lubis, 2022). Accordingly, dynamic capabilities theory Teece (2018) emphasizes how a company's ability to efficiently and effectively respond to external changes and reconfigure internal resources, such as digital leadership, employee engagement, and technology investment, can boost market conditions and company dynamics. The study offers novel insights into these associations to help guide organizations striving to boost performance in the competitive market.

LITERATURE REVIEW

Digital HRM has emerged as an important strategic tool to harness individual and organizational goals (Malin et al., 2024; Sani et al., 2024). Numerous studies have underlined that digitizing HR activities including recruitment, e-learning, performance management, and HR information systems, can significantly help streamline employees with organizational work systems and boost work effectiveness (Sangaji et al., 2022). This further results in improving organizational outcomes (Zhang, 2025). Thus, we can see how digital HRM can systematically help energize a resource chain for individual and organizational outcomes. Notably, there are studies suggesting that often HR works and influences organizational end results through some engendering mechanisms. For instance, scholars have hinted towards the significance of employee engagement as a mediating entity in such relationships (Gupta, 2017; Kang & Sung, 2017). Accordingly, research has also shown that digital HR innovations can foster engagement by facilitating effective communication, promoting transparency, and enabling flexible

access to HR services (Ayanponle et al., 2024; Tritisari et al., 2026). Thus, we argue that digital HRM will harness employee engagement, which will further result in boosting organizational performance. Therefore, we tested:

H1: *Employee engagement mediates the relationship between Digital HRM and Organizational performance*

Linkage between digital integration into HR prospects has attracted scholarly attention from all corners. This is principally due to how these prospects are reshaping the work outcomes. Recent studies have suggested that digital HRM has a robust impact on organizational prospects like productivity, agility, and data process efficiencies (Strohmeier, 2020). Likewise, similar assertions have also been made by other notable studies in the area (e.g., Khalid Alqarni (2023)). However, some scholars argue that this association is not always direct and thus, there is a need to look for several entities that might be intervening in this relationship.

Herein, digital leadership has emerged as a notable factor, assisting organizations in navigating technologies for responsive organizational transformation. It caters to a leader's skill and ability to leverage digital tools, harness innovation, and guide employees through the phase of organizational change. Scholars suggest that leaders equipped with digital mindfulness are better at connecting the technological initiatives with organizational strategies, thereby boosting organizational performance (Klein, 2020). Hence, we assert that digital leadership could serve as the engendering mechanism between digital HRM and the organizational performance association. According to (Sousa & Rocha, 2019), leaders' behaviors significantly influence how digital tools are adopted and the extent to which they are effectively utilized. This indicates that when leaders actively promote technology prospects, they energize employees to engage and strive for responsive integration of work, personnel, process, and other operational prospects, thus improving organizational performance. Therefore, we tested:

H2: *Digital leadership mediates the relationship between digital HRM and organizational performance*

Building on the literature review of the above hypotheses that digital HRM boosts organizational performance through intervening mechanisms, the current research asserts that multiple progressive mediator associations may better explain how this association results. Digital leadership and employee engagement can operate as a linked pathway through which digital HRM transforms into enhanced organizational outcomes.

Digital HRM practices, including e-recruitment, digital performance systems, and analytics, create a technologically robust work environment that needs effective

leadership to unlock their full potential (Asril et al., 2026). Thus, scholars suggest that digital leadership plays an instrumental role in shaping employee perceptions and responses to digital competence (Anvari, 2024). Accordingly, employee engagement, which represents a higher level of employee immersion and dedication, has been linked with leadership. Research studies have underlined that leadership behaviors can noticeably boost engagement through promoting meaningful work, crafting, and autonomy (Jonck & Manamela, 2025; Lichtenthaler & Fischbach, 2018). In digital environments, engaged employees are more likely to make the most of digital tools for better individual and organizational outcomes. Importantly, some studies have hinted towards the sequential mediation process, suggesting how digital leadership can boost engagement through harnessing a healthy and innovative work climate, which subsequently boosts job performance (Zia et al., 2025). Accordingly, similar assertions can also be found in the study by Tasneem Fatima (2024). Though these empirical traces bring some scholarly understanding, there is still a big arena demanding empirical attention on this matter, particularly on how digital leadership and employee engagement sequentially mediate in the association between digital HRM and organizational performance. Thus, we tested:

H3: *Digital leadership and employee engagement sequentially mediate the relationship between Digital HRM and organizational performance.*

METHODOLOGY

The study adopted a quantitative methodology. Therein, a self-administered questionnaire was distributed amongst the 10 major banks in the Kingdom of Bahrain. The HR departments were approached for approval and facilitation of the questionnaire for the data collection process. With several 50 questionnaires per bank, a total of 500 questionnaires were distributed, out of which 466 were successfully obtained. The initial screening resulted in discarding 95 questionnaires. Thus, 371 responses were found appropriate for final data analysis and interpretation. The data collection shows the final response rate of 74.2 percent, which is appropriate for studies in social sciences (Sekaran & Bougie, 2016).

INSTRUMENTS

The current study used prominent scales for the framework. A seven-item scale was adapted from Claassen (2021) to test digital leadership. Accordingly, a five-item scale was adapted to test employee engagement from Saks (2006). Furthermore, a four-item scale was adapted for organizational performance from Jeffrey G. Covin (1989), and lastly, a six-item scale was adapted from the study by Kim et al. (2018) to test digital HRM.

RESULTS

Structural equation modeling with Smart PLS 4 was used to test the study's conceptual framework (Sarstedt et al., 2024). Therein, a two-stage approach was deployed, catering to the assessment of the measurement model and structural model, following the recommendations of Anderson (1988). The measurement model tests the psychometric properties of the constructs of the study, and the structural model tests the significance of the hypothesized relationships. The measurement model in Table 1 focuses on the latent constructs and observed items. The main purpose of the measurement model is to assess the reliability and validity of each item and construct (Hair et al., 2019). In the measurement model, outer loading indicates the strength of each relationship towards constructs. According to (Hair et al., 2017), the loading should be 0.5 or above. Item reliability is assessed through the outer loading. Table 1 shows the items loading ranging from 0.50 to 0.95, which confirms that item loading meets the recommended threshold. In the measurement model, we assess the composite reliability, which reflects the indicator of constructs consistent with the measure of the same concept, and should be 0.7 and above. Table 1 shows that the composite reliability value ranges from 0.936 to 0.924, which indicates that our study meets the minimum requirement of composite reliability recommended by Hair et al. (2019). The last thing we assess from the measurement model is average variance extract. According to Hair et al. (2019), which average variance extract should be atleast 0.5. Table 1 shows that average variance ranging from 0.794 to 30.735. These statistical numbers confirmed that the average variance extracted meets the minimum requirement. These are the results of confirming the adequacy of the measurement model.

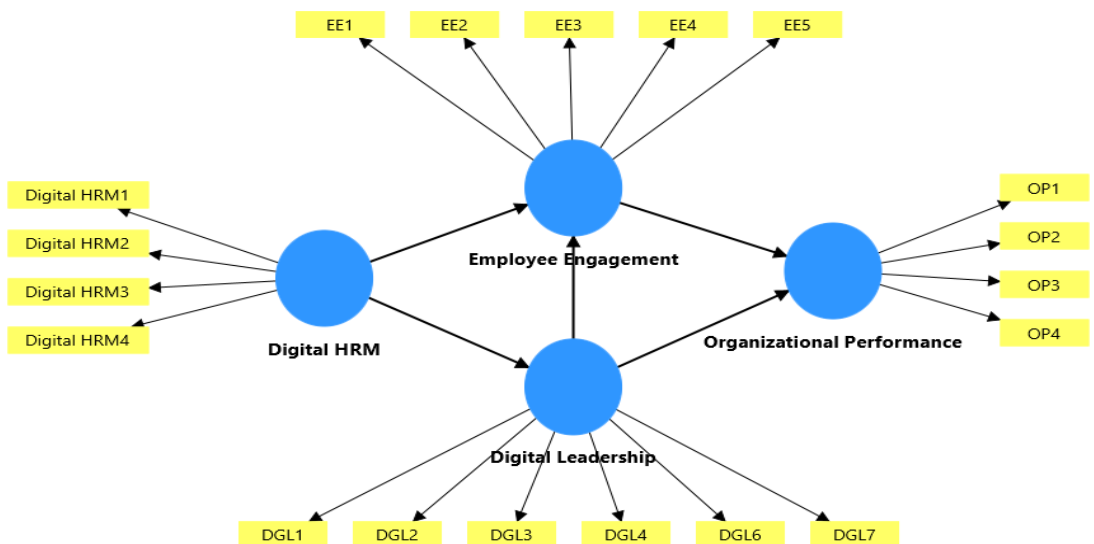


Figure 1: Measurement Model

Table 1: Measurement

Constructs	items	loading	CR	AVE	R-Squire
Digital Leadership			0.936	0.710	0.627
	DGL1	0.801			
	DGL2	0.950			
	DGL3	0.783			
	DGL4	0.925			
	DGL6	0.715			
	DGL7	0.857			
Digital HRM			0.915	0.735	
	Digital HRM1	0.931			
	Digital HRM2	0.929			
	Digital HRM3	0.939			
	Digital HRM4	0.573			
Employee Engagement			0.951	0.794	0.123
	EE1	0.923			
	EE2	0.870			
	EE3	0.910			
	EE4	0.892			
	EE5	0.859			
Organizational Performance			0.924	0.753	0.508
	OP1	0.860			
	OP2	0.804			
	OP3	0.956			
	OP4	0.843			

Discrimination validity was assessed in the measurement model, following the recommendation of ≤ 0.90 by [Henseler et al., \(2015\)](#). Discriminant validity was assessed through the HTMT. [Table 2](#) showed that all HTMT values were below the recommended threshold of 0.90. Above results indicate the adequacy of validity among the variables.

Table 2: Discriminant Validity -Heterotrait-Monotrait ratio (HTMT)

	Digital HRM	Digital Leadership	Employee Engagement	Organizational Performance
Digital HRM				
Digital Leadership	0.792			
Employee Engagement	0.358	0.333		
Organizational Performance	0.625	0.682	0.532	

After establishing validity and reliability, the structural model (inner Model) examined the hypothesized relationship among the constructs ([Hair et al., 2019](#)). The result of structural model analysis confirms the constructs' hypothesized relationships and provides statistically significant results, which are reflected by path coefficients, t-

value, and p- value. The mediating hypothesis was assessed by examining the indirect effects using the bootstrapping step.

Table 3: Structural Model

Constructs	Beta	STDEV	T statistics	P values
Digital HRM -> Employee Engagement -> Organizational Performance	0.066	0.033	1.978	0.024
Digital HRM -> Digital Leadership -> Organizational Performance	0.429	0.045	9.470	0.000
Digital HRM -> Digital Leadership -> Employee Engagement -> Organizational Performance	0.042	0.024	1.743	0.041

In H1, employee engagement mediates the relationship between Digital HRM and Organizational ($\beta=0.066$, $t = 1.978$, $P<0.024$), thus supporting the hypothesis. Accordingly, in H2, Digital leadership mediates the relationship between digital HRM and organizational performance ($\beta=0.429$, $t = 9.470$, $P<0.000$), hence supporting the mediating relationship. Lastly, in H3, Digital leadership and employee engagement sequentially mediates the relationship between Digital HRM and organizational performance ($\beta=0.042$, $t = 1.743$, $P<0.041$), thus providing support for serial mediation.

DISCUSSION

The findings of the current study offer critical insight into the channels through which digital HRM fosters organizational performance. The results suggest that employee engagement mediates the digital HRM and organizational performance association ($\beta = 0.066$). This indicates that technology-supported HRM systems can significantly help boost employees' connectivity, immersion, and dedication towards work through psychological nourishment, which ultimately results in fostering organizational performance. The result offers support to extant literature supporting the intervening effect of employee engagement ([Ayanponle et al., 2024](#); [Tritisari et al., 2026](#)). However, the comparatively weak engagement link also indicates that engagement may not be fully sufficient to facilitate the digital HRM and organizational performance association. This could be since engagement is influenced by diverse prospects such as culture ([Taneja et al., 2015](#)), trust ([Bulińska-Stangrecka & Iddagoda, 2020](#)), support [Sulistyawati and Sufriadi \(2020\)](#), etc. Thus, businesses need to understand that deploying technology in HR functions will not automatically boost employee engagement.

The findings also outline that digital leadership plays a much stronger mediating role in the digital HRM and organizational performance association ($\beta = 0.429$). This highlights the acute significance of leadership in capacity building and encouragement for the digital transformation. This finding hence educates that digital technology

prospects, such as HR systems, can be more effective in the presence of tech-savvy leaders who shape employee perceptions, encourage innovation, and can effectively align technological initiatives with organizational outcomes. The results show alignment with prior studies (Alqarni et al., 2023; Sousa & Rocha, 2019), underlining that leadership is critical, but at the same, investments in technology alone cannot single-handedly guarantee better organizational performance unless coupled with leaders who promote digital learning, collaboration, and innovation.

Furthermore, the results of the current study also found empirical support for the sequential mediation of digital leadership and employee engagement in the digital HRM and organizational performance association ($\beta = 0.042$). Although the serial mediation effect is significant, the smaller coefficient, however, indicates that the pathway from digital HRM to organizational performance is multifaceted and indirect. The findings imply that digital leadership first nourishes conditions and environment that foster employee engagement, which successively contributes to organizational performance. From a real-world perspective, when leaders effectively harness technology responsiveness, promote technological transitions, and encourage employee participation, they may boost employees' psychological resourcefulness (engagement) thereby predicting better organizational outcomes. Taken together, the findings suggest that organizations aspiring to better performance gains need to have investments in digital HR functions that help develop digitally competent leaders who nurture employee engagement to make the best use of digital transformation initiatives.

THEORETICAL IMPLICATIONS

Several important theoretical implications can be noted from the findings of the current study. The study has extended the applicability of the Resource-based View (RBV) and Dynamic Capabilities theory in the domain of digital transformation and organizational performance. The results offer support for the RBV by underlining that digital HRM can be considered as an instrumental organizational resource, contributing towards organizational performance. When capitalized through effective workforce and managerial capabilities, digitizing HR systems can bring a wide range of benefits for any business. Accordingly, the study has also extended the RBV literature by highlighting intangible factors, such as engagement, serving as strategic resources to strengthen the utilization of digital HR systems. The study advances the Dynamic Capabilities theory by statistically confirming the role of digital leadership as a critical dynamic capability, facilitating organizations to proactively respond to technology changes and developments. In this, the strong digital leadership mediation results confirmed that businesses today need leaders capable of configuring, deploying and integrating digital resources both effectively and efficiently to achieve strategic results. This supports (Teece, 2018) assertion that organizational success in turbulent times does

not solely rely on resource possession but also on the individual or institutional abilities to transform and adapt those resources as per the evolving market dynamics.

Moreover, the significant sequential mediation results of digital leadership and employee engagement in the digital HRM and organizational performance relationship contribute theoretically by integrating RBV and Dynamic Capabilities theory in a unified explanatory framework. The results of the study suggest that digital transformation is not solely driven by technological infrastructure but by a serial process whereby leadership capabilities first shape employee attitudes and behaviors, which consequently influence organizational outcomes. This interwoven relationship advances extant literature by explaining how organizational resources, such as digital HRM, are converted into strategic capabilities like digital leadership and engagement that result in boosting organizational performance. Lastly, the findings of the current study invite scholars to rethink the technology and its effective utilization. The relatively weaker mediation of employee engagement compared to digital leadership suggests that organizational performance across digital environments potentially relies more on adaptive leadership capabilities than on technology adoption alone. This theoretical perspective, hence, underlines that to sustain a highly digitized competitive era, there is a need for greater integration and alignment of technological resources, leadership competencies, and employee capabilities.

PRACTICAL IMPLICATIONS

The findings of the current study also offer some important implications for practitioners. First, the results of the current study underline that digital HRM systems can significantly contribute towards organizational performance when organizations move beyond simple adoption of technology and concentrate on blending digital tools across wider organizational processes. For multinational corporations as well as businesses in the developing world, this implies that building resources and investments in HR systems and technologies should be aligned with the organizational strategy. This is particularly essential in today's era of AI-Driven economies moving towards HR transformation (Metta & Kumar, 2025). Secondly, the strong mediation of digital leadership in the current study has shown that businesses need to focus on developing leaders who are digitally savvy and have a passion for working on technological disruption. Such leaders can harness trust and collaboration for innovation in an organization (Ali, 2023). Businesses should hence work on providing the necessary learning and development to leaders who emphasize digital literacy, change management, innovation, data-driven decision making, and digital communication. Notably, this is particularly important for organizations operating internationally and managing virtual teams where digital leadership plays a crucial role.

The findings also imply that employee engagement is instrumental in harnessing the right behaviors through which digital HRM contributes to organizational success. Consequently, organizations should ensure that digital transformation initiatives focus not solely on technology but also on the humans who will be utilizing it for the achievement of organizational goals. To address this, HR managers should adopt inclusive digital technologies that effectively integrate employees to serve as critical prospects for strategic capabilities. This interlinked perspective enhances extant literature by explaining how organizational resources are converted into strategic capabilities that ultimately boost organizational performance. The significant sequential mediation results outline that organizational performance can be enhanced when digital leadership fosters higher employee engagement during the process of digital transformation. This suggests that leaders should act as facilitators of engagement by communicating clear digital visions, encouraging innovation, and supporting employees for better results. Leaders should serve as facilitators of engagement by communicating a clear vision for digital transformation, particularly during the process of digital changes in the company. Organizations operating across diverse business communities should create an integrated digital transformation framework where leadership development, employee engagement, and HR digitization are pursued simultaneously.

Lastly, from a wider policy perspective, governments and educational institutions may also benefit from the results of the current study by realizing the significance of digital capabilities in the workforce. Policymakers in this regard need to work on promoting digital skill development initiatives. Equally, educational institutions particularly in the higher education sector should consider including digital leadership and digital HRM in the curriculum to help graduates meet the market demands.

LIMITATIONS AND FUTURE RESEARCH

This study adds to the growing body of literature on digital transformation and organizational performance; however, some limitations must be acknowledged. Firstly, the research used a cross-sectional research design. Such research limits the possibility to establish causal relationships between variables. While the statistical findings of the study support the proposed mediation relations, the results should be interpreted associatively rather than causally. Future research may use longitudinal designs to explore the development of Digital HRM initiatives, leadership behaviors, and employee engagement over time and their effect on long-term organizational performance. Second, data were collected from employees in the banking sector in Bahrain. Although the banking industry is a highly digitized environment, the findings may not be fully generalizable to other industries or national contexts. Digital transformation initiatives are often heterogeneous in terms of organizational culture, regulatory contexts, technological maturity, and the characteristics of employees.

Future research should reproduce the model in different sectors (e.g., healthcare, manufacturing, education, and public administration) and in different geographic regions to improve external validity. Thirdly, the study was based on self-reported survey data of a single source. Such an approach may present problems of common method bias and social desirability. Future research may benefit from integrating multiple data sources, such as supervisor evaluations, organizational records, and objective performance indicators, to provide a more comprehensive assessment of organizational outcomes. Finally, the rapid development of AI, machine learning and generative AI technologies is changing how HR functions and how HR leaders operate. Further studies should explore the impact of the new AI-based HR systems on leadership effectiveness, employee experience, ethical decision-making, and organizational performance.

Conclusion

Digital transformation is now a strategic imperative for organizations that want to stay competitive in an increasingly technology-driven world. The current study examined the role of Digital HRM in organizational performance through the mediating role of digital leadership and employee engagement. The findings indicate that Digital HRM improves organizational performance not only through technological improvements but also through significant human and leadership mechanisms. It was found that employee engagement mediated the relationship between Digital HRM and organizational performance. This finding highlights the need to create work environments that are psychologically bonded and committed to the organizational goals. Indeed, the study found an even more prominent mediating role of digital leadership. This finding underscores the need for leaders who can drive digital transformation, align technology initiatives with strategic goals, and nurture innovation.

More importantly, the study findings confirmed significant sequential mediation relations where Digital HRM enhances digital leadership which in turn improves employee engagement and finally contributes to improved organizational performance. This finding supports the view that successful digital transformation goes beyond technology adoption and has to integrate leadership capabilities and employee involvement. From a theoretical perspective, the study extends the Resource-Based View and Dynamic Capabilities Theory by demonstrating how digital resources are transformed into organizational value through processes of leadership and engagement. From a practical standpoint, the findings suggest that organizations should consider Digital HRM, digital leadership development and employee engagement initiatives as interrelated investments rather than as stand-alone initiatives. The key finding of the study is that technology alone does not lead to better organizational performance. Instead, improvements in performance are achieved when digital technologies are complemented by capable leaders and engaged employees who can realize digital

opportunities into tangible organizational results. The alignment between technological infrastructure, leadership capabilities and employee engagement will continue to be a critical determinant of long-term success as organizations continue to navigate an increasingly digital future.

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