Research Paper

Enhancing Employer Branding through Virtual Reality: The role of E-HRM Service Quality and HRM Effectiveness in the Hotel Industry of Pakistan

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**Abstract:** The hotel industry has been transformed with hybrid workplaces and fast digitalisation due to the pandemic, while immersive VR-based simulation applications have been widely used to sustain employer branding. In this regard, the purpose of this study is to examine the crucial role of virtual reality (VR) to leverage employer branding in the hotel industry. It also investigates the effect of VR on E-HRM service quality and HRM effectiveness. Data was collected from 175 hotel employees using a survey form and analysed with PLS-SEM. The findings show that VR plays a key role in improving the E-HRM service quality in hotels. E-HRM service quality also significantly contributes to the positive assessment of E-HRM that ultimately leads to HRM effectiveness. Findings elucidate that HRM effectiveness is one of the driving factors that positively influence employer branding. This research study has substantial practical contributions for the top management and HR practitioners with regard to the efficient use of VR in the hotel industry.

**Keywords:** Virtual reality, E-HRM service quality, assessment of E-HRM, HRM effectiveness, employer branding, attitudes towards VR

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Introduction

The COVID-19 pandemic devastated the tourism and leisure industry with international border closures and travel bans (Hanafiah, Balasingam, Nair, Jamaluddin, & Zahari, 2021), which led to one of its lowest financial performance in 2020 (Sarkady, Neuburger, & Egger, 2021). In Pakistan, 60.2% of the overall Gross Domestic Product (GDP) is allocated to the service sector but the hotel sector receives one of the lowest allocations amongst the many service sectors. There are approximately 10,000 hotels in the country, and despite its high potential, only 3% of the GDP is set aside for this sector. Low business performance and low standard services are the main reasons for the decline of this sector among all service sectors (Hameed, Nisar, & Wu, 2021). The COVID-19 epidemic disrupted and transformed the workplace. Before the epidemic, most employees worked in physical offices but the outbreak necessitated more hybrid workplaces and rapid digitisation of job functions (Subramanian & Madasamy, 2013). Given this unprecedented and trying period, the hotel industry must adapt virtual and digital strategies to enhance and strengthen their employer branding (Nelke, 2021).

The advent of digital media has drastically altered the world of human resource management (HRM) (Bae, Chen, David Wan, Lawler, & Walumbwa, 2003). Today, digital networking platforms and applications are used to develop employer branding as well as to recruit and retain employees (Bharti & Antil, 2021). Employer branding is the association of favourable perceptions to any firm by both potential and current workers and it strengthens the organisation’s position by developing a value proposition. However, the recent epidemic had presented an unprecedented circumstance for which most organisations were unprepared for. The lessons learned from the pandemic should teach hoteliers to be more flexible and proactive, in dealing with the implications of such crises (Naz & Zahidi, 2021). Employees are more of a source of employer branding whereas, employer attractiveness is used to assess employer brand. Thus, the modern business’ attraction, success, and prospect operations are all dependent on the management’s willingness to prioritise potential workers as the most essential stakeholders in the organisation (Verčič, 2021). The e-learning system overcomes time and distance constraints and facilitates HRM, as employees or potential employees can attend online training sessions which in the long run can contribute to company growth (Giannakos, Mikalef, & Pappas, 2021). As the “digitised” workforce increasingly encounters firms with changing HRM
practices, the digital era necessitates digital HRM procedures. More significantly, organisations must develop strong employer brands in order to recruit, inspire, and retain people and one intriguing way of employer branding is to gamify employer branding initiatives using games for educational purposes (Küpper, Klein, & Völckner, 2021). When HR services are linked with technology, it generates goodwill both inside and outside of the organization, strengthens employer branding and eventually adds to the firm’s success; hence, the integration of HR services with business strategy is important (Majumder & Mondal, 2021). Previous studies have shown that effective human resource policies and procedures can help the hotel industry function better (Khdour, 2021).

Virtual reality (VR) applications became especially important for virtual vacations when the pandemic halted all travelling activities (Sarkady et al., 2021). Virtual reality apps have successfully captured employees’ enthusiasm to the point that their behaviours and responses have favourably and steadily increased as a result of its content quality, system quality, as well as vividness (Lee, Lee, Jeong, & Oh, 2020). The individual evaluation of electronic human resource management (E-HRM) apps that affect HRM strategy and technological effectiveness is done through self-service apps (Ruel, Bondarouk, & Van der Velde, 2007). Content quality is one of the measures of VR applications that serve to engage and attract customers by displaying quality and functional content which may involve state-of-the-art writing and takes into account the expectations and demand of customers (Lee et al., 2020). System quality refers to innovative technologies which can provide the best support to diverse businesses, in both physical and digital form. On the other hand, vividness refers to pictorial images in bright and bold colours, that are so clear and look realistic that you can virtually touch it (Lee et al., 2020). It is widely acknowledged that the popularity of VR in the hospitality and tourist sectors is reaching new heights (Lee, Lee, & Jeong, 2021).

Despite the widespread acknowledgement of its benefits, the creation of employer branding through VR applications remains understudied in the field of the hospitality and tourism. This is particularly so, as conventional HRM practices are no longer feasible in crises such as a pandemic and modern digitised E-HRM has become increasingly indispensable. Even though the hotel industry has rapidly embraced VR for employee interaction and marketing research, other functions such as quality evaluation, and employees’ psychological acceptance are still developing (Flavián, Ibáñez-Sánchez, & Orús, 2021). In the recent pandemic, the hotel industry faced various challenges and issues, and where employer branding is of major importance, it is necessary to introduce changes that are compatible with emerging technologies practices, such as web-based VR (Myllymäki, 2021). In summary, there is a lack of research literature on how VR applications have empowered the hotel industry in enhancing their employer branding.
Hence, the main aim of the present research is to investigate attitudes as a moderator for the relationship between VR and E-HRM service quality and further explore the assessment of E-HRM effectiveness with employer branding in the context of the hotel industry of Punjab Pakistan. The objectives of the study are fourfold: (1) to investigate the effects of VR on E-HRM service quality (2) to check the effects of E-HRM service quality on assessment of E-HRM (3) to investigate the effects of HRM effectiveness on employer branding (4) to examine the moderating effect of attitude towards VR on the relationship between VR and E-HRM service quality. The theoretical background and literature review is provided in the next section. Then, the methodology is presented, after which, results and discussion are presented in the subsequent section. Lastly, the theoretical and practical implications, and future areas for research are discussed, before ending with a conclusion.

Literature Review

Theoretical Background

The current study is underpinned by resource-based view (RBV), a model formed in the 1980s and 1990s from the works of academics and businessmen such as Birger Wernerfelt, Prahalad and Hamel, Spender and Grant. The RBV is a management framework for determining the strategic resources that a company might employ to achieve a lasting competitive edge. According to RBV, organisations with resources can gain a competitive edge by using a subset of those resources towards long-term success. Moreover, resources that are precious and scarce can be used to gain a modest edge. The 1991 essay Firm Resources and Sustained Competitive Advantage by Barney is widely regarded as a seminal contribution in the development of resource-based perspective. Further, the resource-based approach is popular in employer branding studies (Lissaneddine, El Idrissi, & El Manzani, 2021). In RBV, organised resources, business capabilities and core competencies lead towards the final strategic goals. As such, RBV has been widely employed in organisational performance research (Innocent, 2015). On the other hand, the Marketing Mix theory refers to a set of actions, or tactics, for a business to promote its brand or products in the marketplace (Sarkady et al., 2021). Another theory called social exchange theory, in contrast to RBV, involves a cost-benefit analysis for people to make decisions by weighing the costs and benefits of a relationship or action, consciously or unconsciously, with the goal of maximizing their rewards (Eriksson, Näppä, & Robertson, 2022).

In national and international companies, web-based or virtual HRM solutions are set up to replace face-to-face HRM functions (Parry, 2011). This ultimately enhances positive emotional reactions and facilitates the highest level of behavioural engagement (Flavián, Ibáñez-Sánchez, & Orús, 2019). VR experiences can generate
favourable responses from users, such as enhanced experiences and behavioural intentions (Huang, Backman, Backman, & Moore, 2013). More specifically, features of VR application such as quality of content, system, and vividness can directly influence customer behaviour (Lee et al., 2020).

Hotel VR applications encourage and attract potential customers through virtual hosting of latest online trends, destination mobile apps and virtual decision-making, which indirectly affects employer branding.

![Figure 1. Research framework](image)

**Hypothesis Development**

**Virtual Reality and E-HRM Service Quality**

Virtual reality (VR), which depicts the simulation world, has undergone numerous technological evolutions in the past decade, as a result of technological advancements including telepresence (Loureiro, Guerreiro, & Ali, 2020). Studies have demonstrated that VR features such as quality of content, system, and vividness can directly impact user’s attitudinal and behavioural responses (Lee et al., 2020) and ultimately, underlying e-HRM adoption motives (Poba-Nzaou, Uwizeyemunugu, & Laberge, 2020). VR experiences also generate favourable responses from users, such as enhanced experiences and behavioural intentions (Huang et al., 2013).

Recent research demonstrates that the competitiveness of decision-makers when addressing the quality of the E-HRM application and its services fully aligns with the resources used for deployment activities where quality is retained in the form of content, system quality superiority, excellence in the system, and vividness (Said & Umachandran, 2020). In their work on virtual reality and E-HRM service quality, Jackowska & Lauring (2021) found that VR web-based applications with quality in content, system, and vividness improves E-HRM service quality delivery. In this way, quality management techniques for content and system are supported through E-HRM service quality. Based on this, we propose the following hypothesis:
H1. Virtual reality is positively and significantly associated with E-HRM service quality.

E-HRM Service Quality and Assessment of E-HRM

E-HRM service includes e-payroll, self-service modules for staff, e-benefits, e-attendance records, e-performance management systems, e-recruitment, career management, and e-succession planning (Garengo, Sardi, & Nudurupati, 2021). The relationship between E-HRM service and quality of E-HRM functions has been proven positive (Bondarouk, Harms, & Lepak, 2017). Thus, a service design methodology for improving the quality of E-HRM service can be developed and implemented (Mashhady, Khalili, & Sameti, 2021). E-HRM service quality is useful for the assessment of E-HRM (Meijerink, Boons, Keegan, & Marler, 2021) whereby the improvement of E-HRM quality service simply increases the employee’s knowledge which is associated with the assessment of E-HRM. HRM can support value-generating processes or services through IT services, and transformational services (Baron, Warnaby, & Hunter-Jones, 2014). Thus, E-HRM service quality is connected with the assessment of E-HRM, as E-HRM reduces cost and improves service quality which ultimately builds capacity in the HR Department as a strategic partner (Ruel et al., 2007). In this study, employee self-service and E-HRM applications are tested to see if they influence HRM’s strategic and technical effectiveness, Particularly, the quality of content and structure of e-HRM applications (Ruel et al., 2007). Accordingly, we posit the following hypothesis:

H2. E-HRM service quality is positively and significantly associated with the assessment of E-HRM.

Assessment of E-HRM and HRM Effectiveness

The assessment of E-HRM is vital for determining the effectiveness of HRM functions (Bondarouk et al., 2017). Given the versatile usage of E-HRM in HRM functions, E-HRM assessment tools increase the value of HRM activities for an organisation and as well as for its employees (Zhou, Liu, Chang, & Wang, 2021). By introducing the E-HRM assessment, the headcount of the HR department can be reduced in a more efficient way, for example, through the reduction of transactional activities or generic labour. Further, strategic leadership to develop and maintain more E-HRM functions within the organisation can promote the strategic role of HR which ultimately leads to HRM effectiveness (Gambi, Boer, Jorgensen, Gerolamo, & Carpinetti, 2021). In short, the use of E-HRM will save expenses, enhance HR functions and develop the HR department as a strategic partner (Baron et al., 2014). In this respect, we hypothesise that:
H3. *Assessment of E-HRM is positively and significantly associated with HRM effectiveness.*

**HRM Effectiveness and Employer Branding**

E-HRM effectiveness is directly related to the overall organisational performance, including employer branding where there is a demonstrated efficiency of E-HRM functions e.g. recruitment and selection, performance management, compensation and benefits, employee relations and grievances, training, and development (Khdour, 2021). And in this scenario, E-HRM can help build a strong employer brand image by hiring and training employees to help them engage positively with their organisation (Küpper et al., 2021).

Employer branding refers to the promotion of an organisation’s image both within and outside of the business. In this respect, strategic HRM functions such as employer image, employer attractiveness, employer productivity, organisational identity, organisational culture, and employer brand loyalty, are all factors that influence the firm’s image, be it from outside or within (Verčič, 2021). The successful branding of a company which supports employee retention is driven by good sustainable HRM procedures, for functions such as employee empowerment, training, and development, as well as remuneration system (App, Merk, & Büttgen, 2012). Good assessment of HRM methods, including staff empowerment, training, and development, pay evaluation system, all drive a company’s success, and branding in staff retention (Drury, 2016). Considering this, we suggest that:

**H4. HRM effectiveness is positively and significantly associated with employer branding.**

**Moderating Role of Attitude towards VR on the Relationship between Virtual Reality and E-HRM Service Quality**

Immersive virtual reality (VR) has emerged as a potentially game-changing technology for psychiatric treatments (Geraets, van der Stouwe, Pot-Kolder, & Veling, 2021). The virtual reality (VR) platform delivers a totally immersive learning experience. Despite the growing popularity of virtual reality tools, its research lags in analysing and assessing such novel approaches (Jiang, Akdere, & Lobo, 2021). Attitudes towards VR after seeing the content, system quality, and vividness of HR web-based virtual applications, may strengthen the relationship between VR and E-HRM service quality (Strohmeier & Kabst, 2014). Greater employee participation leads to a “sense of ownership” and a more positive attitude towards change (Ruta, 2005). In fact, studies have shown how VR experiences can result in favourable responses from users, such as enhanced experiences and behavioural intentions (Huang et al., 2013).
Accordingly, we suppose that:

H5. The moderating role of attitude towards VR is significant on the relationship between VR and E-HRM service quality.

Methodology

Questionnaire and Pre-test

Based on past similar studies, the tools to measure the basic constructs were adopted exclusively. The scale of VR was used as second-order construct and treated as a reflective measurement, as it was a multi-item measurement. Three dimensions made up the VR scale, namely content, system, and vividness of quality. Guided by past studies (Lee et al., 2020), a scale of six items was adapted to measure VR and three items were selected to measure attitude towards VR. Four items were used for the assessment of E-HRM, and six items were used to measure HRM effectiveness (Ruel et al., 2007). Four items were used to measure E-HRM service quality, adapted from Bondarouk et al. (2017) while three items were used to measure employer branding (Lee et al., 2020). Table 1 shows all the items of the scale.

<table>
<thead>
<tr>
<th>Sr#</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In my hotel, I feel interested to learn virtual reality through E-HRM application.</td>
<td>Lee et al. (2020)</td>
</tr>
<tr>
<td>2</td>
<td>The time I spent in the E-HRM application experience just slipped away.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I want to have a realistic experience through the E-HRM application.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The interface of VR application was user friendly.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The imagery of VR application was clear.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The imagery of VR application was dull/sharp.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I am regularly informed about the initiatives taken by the HR department.</td>
<td>Bondarouk et al. (2017)</td>
</tr>
<tr>
<td>2</td>
<td>The HR services are performed correctly the first time.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The HR services guarantee error-free administration.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The HR department gives understandable information on HR activities.</td>
<td></td>
</tr>
</tbody>
</table>
Enhancing Employer Branding through Virtual Reality: The role of E-HRM Service Quality and HRM Effectiveness in the Hotel Industry of Pakistan

Table 1 (con’t)

<table>
<thead>
<tr>
<th>Sr#</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I understand the HR strategy of my hotel.</td>
<td>Ruel et al. (2007)</td>
</tr>
<tr>
<td>2</td>
<td>When I need advice on HR issues, the HR department helps me quickly since the introduction of E-HRM.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The HR activities in my hotel help me to achieve my goals.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Top management and HR professionals clearly share the same vision.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I use e-HRM in my daily work.</td>
<td>Lee et al. (2020)</td>
</tr>
<tr>
<td>6</td>
<td>I do not use the e-HRM applications in a finest way.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>E-tools help to take care of routine HR transactions.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I feel the administration of HR documents is efficient.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The HR department is willing to provide a service.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The HR department provides its services at the time it promises to do so.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Virtual reality applications increase employer branding.</td>
<td>Lee et al. (2020)</td>
</tr>
<tr>
<td>12</td>
<td>We have found the time and effort spent on this relationship very worthwhile.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The virtual tour will complement a real tour and affect employer branding.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I plan to visit another destination in the future after checking it on virtual reality application.</td>
<td>Lee et al. (2020)</td>
</tr>
<tr>
<td>15</td>
<td>I will consider E-HRM application as the first choice for any sort of work.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I intend to use E-HRM application instead of asking others regarding some information of hotel.</td>
<td></td>
</tr>
</tbody>
</table>

The questionnaire was tested for content validity by submitting it to five experts, including three assistant professors who have expertise in human resource management and two human resource managers from selected hotels. In response to their comments, a few modest changes were done. A pilot study was undertaken to guarantee clarity, and the questionnaire was distributed to 30 respondents for feedback. No changes were needed for the survey. In addition, reliability analysis was performed to determine the internal consistency of the scales employed in the study.
Non-response Bias

Due to the researcher’s own selection of data, it was difficult to test non-response bias. This was because the researchers provided all of the hotel employees plenty of time to complete the surveys at their leisure before collecting them physically. As a result, the time difference between those who reacted first and those who responded later was rendered meaningless.

Common Method Variance (CMV)

The term “common method variance” refers to a variance element of the measuring method rather than a construct of interest (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Variations in analysis are a potential problem in research unless the dependent and independent variables are determined using self-reported data from the same persons (Podsakoff et al., 2003; Richardson, Simmering, & Sturman, 2009). A common technique variance was used because this study only collected data from one respondent. As explained by Podsakoff et al. (2003) as well as Chang, Van Witteloostuijn, and Eden (2010), the researchers used pre- and post-remedies to reduce the impact of common method variance (CMV).

Various types of scales were utilised in the pre-remediation phase, and the labels for each component were removed from the questionnaire. Common method variance, or CMV, is the degree of incorrect correlation between variables brought on by using the same technique, often a survey (Chang et al., 2010; Podsakoff et al., 2003). All of the labels in the questionnaire were eliminated at the pre-remedial phase, and various types of scales were used.

According to Kock (2015), the partial least squares (PLS) methodology can be used to discuss the typical method bias in the domain of structural equation modelling (SEM). The entire collinearity test could be used to analyse CMV in SEM. The current study also used variance inflation factors (VIFs) generated by a comprehensive collinearity test to discover prevalent method bias. When the VIFs are greater than 3.3, the model is likely to be contaminated by common method bias (CMB). As a result, if the VIFs with full collinearity test are less than 3.3, the model may be considered free of common method bias. The results of this investigation revealed that all the VIF values for all the constructs were less than 3.3, indicating that the study is free of contamination from common technique bias. As a result, it may be concluded that CMV was not a concern in the study.

Sample Design and Data Collection

Data was gathered from hotel employees throughout Punjab Pakistan, where their establishments adopted and used VR. Simple random sampling was used to select employees who were directly involved in the implementation of VR in their hotels,
and were given a self-administered questionnaire. The questionnaire was distributed to 535 HR executives, out of which 175 respondents from 30 different 3- & 4-star hotels of Pakistan completed the questionnaire. Finally, 168 valid responses were found fit for data analysis.

**Measurement Model**

The current study used PLS-SEM with Smart PLS 3 to evaluate the study hypotheses since it is broadly used and regarded as a modest evaluation tool among all business sectors, notably in the hospitality and tourist sector (Lee et al., 2020). This empirical study aims to predict and explain the analysed latent variables using the current contemporary theory. PLS-SEM can be transformed into an efficient tool for testing a subject matter if the goal is elucidation and build estimation (Hair Jr, Hult, Ringle, & Sarstedt, 2016). Furthermore, it is deemed as a versatile methodology for model evaluation (Ringle, Wende, & Will, 2005). Another argument for using PLS-SEM is that it has fewer criteria for sample size and data normality than Amos; hence, it was selected to avoid data normality difficulties and sample size issues (Hair Jr et al., 2016). In addition, the PLS method and bootstrapping method were used to determine factor loadings for construct validity and internal consistency reliability, path coefficients, and related significant levels for testing hypotheses. The measurement model was constructed first, and then estimations were determined using structural model assessment (Lee et al., 2020).

**Findings**

As a result of the recent epidemic, the hotel sector has witnessed the rise of hybrid workspaces and rapid digitisation of functions. The findings demonstrate that VR opens new opportunities in this area by enhancing employer branding.

**Measurement Model**

Factor loadings, average variance extract, and composite reliability were used to examine convergent validity of the measurement model. Table 1 and Figure 2 show that, except for a few values, factor loadings surpassed the suggested threshold of 0.60. Similarly, all the composite reliability values (CR) were more than the required value of 0.70, except for attitude towards virtual reality which yielded a CR value of 0.641. The average variance extract (AVE) values for all the study constructs all surpassed the threshold value of 0.50 (Hair Jr et al., 2016), except assessment of E-HRM which yielded 0.403. Items with the lowest factor loadings (< 0.50) were deleted. Similarly, the results of the Heterotrait Monotrait Ratio (HTMT) test verified the measurements’ discriminant validity, as seen in Table 2, where all values were less than the established cut-off value of 0.85 (Li, Lai, Harrill, Kline, & Wang,
2011). Overall, results demonstrate that discriminant validity did not pose any issue to this research.

**Table 2.** Convergent validity

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Loadings</th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Reality</td>
<td>VR1</td>
<td>0.656</td>
<td>0.831</td>
<td>0.871</td>
<td>0.533</td>
</tr>
<tr>
<td></td>
<td>VR2</td>
<td>0.716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VR3</td>
<td>0.616</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VR4</td>
<td>0.785</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VR5</td>
<td>0.793</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VR6</td>
<td>0.793</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-HRM Service Quality</td>
<td>EHRMSQ1</td>
<td>0.794</td>
<td>0.731</td>
<td>0.826</td>
<td>0.545</td>
</tr>
<tr>
<td></td>
<td>EHRMSQ2</td>
<td>0.748</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EHRMSQ3</td>
<td>0.772</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>EHRMSQ4</td>
<td>0.628</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HRME1</td>
<td>0.282</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes towards VR</td>
<td>AVR2</td>
<td>0.297</td>
<td>0.601</td>
<td>0.641</td>
<td>0.535</td>
</tr>
<tr>
<td></td>
<td>AVR3</td>
<td>0.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment of E-HRM</td>
<td>AEHRM1</td>
<td>0.744</td>
<td>0.508</td>
<td>0.701</td>
<td>0.503</td>
</tr>
<tr>
<td></td>
<td>AEHRM2</td>
<td>0.885</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AEHRM3</td>
<td>0.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AEHRM4</td>
<td>0.401</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRM Effectiveness</td>
<td>HRME4</td>
<td>0.877</td>
<td>0.689</td>
<td>0.818</td>
<td>0.557</td>
</tr>
<tr>
<td></td>
<td>HRME5</td>
<td>0.821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HRME6</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer Branding</td>
<td>EB1</td>
<td>0.734</td>
<td>0.633</td>
<td>0.797</td>
<td>0.567</td>
</tr>
<tr>
<td></td>
<td>EB2</td>
<td>0.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EB3</td>
<td>0.765</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: CR: Composite reliability; AVE: Average variance extract

**Table 3.** Discriminant validity using heterotrait monotrait ratio (HTMT ratio)

<table>
<thead>
<tr>
<th>HTMT</th>
<th>AEHRM</th>
<th>AVR</th>
<th>EHRMSQ</th>
<th>EB</th>
<th>HRME</th>
<th>VR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEHRM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHRMSQ</td>
<td>0.827</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td>0.374</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRME</td>
<td>0.443</td>
<td></td>
<td></td>
<td>0.27</td>
<td>0.802</td>
<td></td>
</tr>
<tr>
<td>VR</td>
<td>0.63</td>
<td></td>
<td>0.751</td>
<td>0.297</td>
<td>0.385</td>
<td></td>
</tr>
</tbody>
</table>
Figure 2. Measurement model

**Structural Model Assessment**

After ensuring that the model is accurate and authentically valid, structural modelling was conducted to test the study hypotheses. Path coefficients, t-values, and standard errors were computed to assess that the model and relationships are significant based on the data collected. Path coefficient values indicate whether hypotheses are supported or not. In Smart PLS 3, the bootstrapping approach was used to estimate the main and moderating effects (Ringle et al., 2005). As depicted in Table 5 and Figure 3, H1 is supported since VR is strongly and positively correlated with E-HRM service quality ($\beta = 0.425$, $t = 4.13$; LL = 0.03, UL = 0.401) (LL refers to lower limit and UL refers to upper limit). The results also revealed a statistically significant association between E-HRM service quality and assessment of E-HRM ($\beta = 0.629$, $t = 11.29$, LL = 0.076, UL = 0.46), suggesting that H2 is supported. Assessment of E-HRM exhibits a positive association with HRM effectiveness ($\beta = 0.187$, $t = 1.45$; LL = 0.543, UL = 0.73), implying that H3 is supported.

Furthermore, it was found that HRM effectiveness has a significant and positive relation with Employer branding ($\beta = 0.571$, $t = 9.158$; LL = 0.481, UL = 0.683), inferring that H4 is supported. Lastly, results also demonstrate that Attitude towards VR is significantly and positively related with E-HRM service quality ($\beta = 0.299$, $t = 2.557$, LL = 0.0.289, UL = 0.621).
Table 4. Path analysis

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Beta</th>
<th>S.D</th>
<th>t value</th>
<th>P value</th>
<th>LL</th>
<th>UL</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Virtual Reality → EHRM Service Quality</td>
<td>0.425</td>
<td>0.103</td>
<td>4.13</td>
<td>0.03</td>
<td>0.03</td>
<td>0.401</td>
<td>Supported</td>
</tr>
<tr>
<td>H2 EHRM Service Quality → Assessment of E-HRM</td>
<td>0.629</td>
<td>0.056</td>
<td>11.29</td>
<td>0.076</td>
<td>0.46</td>
<td>0.46</td>
<td>Supported</td>
</tr>
<tr>
<td>H3 Assessment of E-HRM → HRM Effectiveness</td>
<td>0.187</td>
<td>0.129</td>
<td>1.45</td>
<td>0.074</td>
<td>0.543</td>
<td>0.73</td>
<td>Supported</td>
</tr>
<tr>
<td>H4 HRM Effectiveness → Employer Branding</td>
<td>0.571</td>
<td>0.062</td>
<td>9.158</td>
<td>0.481</td>
<td>0.683</td>
<td>0.683</td>
<td>Supported</td>
</tr>
<tr>
<td>H5 Virtual Reality*Attitude towards virtual reality → EHRM Service Quality</td>
<td>0.299</td>
<td>0.117</td>
<td>2.557</td>
<td>0.005</td>
<td>0.289</td>
<td>0.621</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Figure 3. Structural model

Discussion & Conclusion

VR application in the context of the hotel industry is a novel concept. This trend has steadily gained prominence in the present era as service industries attempt to strengthen their employer branding (Verčič, 2021) using the content quality, system quality, and vividness of VR (Lee et al., 2020). The current study was designed to examine a new research model that postulates the importance of VR in strengthening employer branding, grounded on the theoretical foundations of resource-based view.
and using employer branding as the dependent variable. Given the current problems and challenges in employer branding, E-HRM’s functions can further strengthen employer branding together with the corporate strategic directions undertaken by organisations (Wilden, Gudergan, & Lings, 2010). Overall, E-HRM has the potential to give businesses a competitive advantage in terms of both employer branding and attracting and retaining people, as well as sustainability in the broader market (Eriksson et al., 2022).

Theoretical Contributions

As explained earlier, employer branding and VR has become an important research field of research for the hotel sector. The current study is adding to this growing body of work by investigating the contributing factors of HRM which are assessment of E-HRM, EHRM service quality, HRM effectiveness as well as the moderating factor of attitude towards VR (Ruel et al., 2007). The current study has a number of theoretical contributions. To begin with, the current research helps to bridge the research gap by investigating the links between the study components, grounded in resource-based view, in the context of the Pakistan hotel sector. Second, the current research study sheds light on the complicated phenomenon of virtual reality and its connection to employer branding. Third, the study establishes that EHRM service quality is a key component in improving E-HRM implementation (Bondarouk et al., 2017). Past studies have not examined how virtual reality actually boosts employer branding. In this respect, the current study contributes to the literature by studying the positive influence of VR through the intervening factors of E-HRM service quality, assessment of E-HRM, and HRM effectiveness. Finally, this study establishes that attitude towards VR is a moderator in the relationship between E-HRM service quality and VR, therefore filling a knowledge gap identified in previous research (Flavián, Ibáñez-Sánchez, & Orús, 2019). It also corroborates that the application of media richness to improve VR features can enhance favourable consumer behaviours (Lee et al., 2021).

The current hospitality and tourist literature based on RBV is inadequate in critical areas, underlining the need for more new research (Kruesi & Bazelmans, 2022). The study gives an overview of the model and highlights its progressive growth in hospitality and tourist research. Lastly, this study identifies, explores, analyses, and summarises the major aspects of virtual reality and employer branding in order to contribute to literature by identifying priority areas that require novel approaches for excellence.

Practical Implications

The current research has considerable practical contributions to hotel top management and policy makers as it highlights the benefits for employees when
HR efficiently uses VR. The primary benefit is that the implementation of E-HRM can save costs, enhance HR service levels, and allow the HR department to become a strategic partner. The study found that the content quality and system quality of VR were critical indicators to gauge respondents’ attitude towards VR. As a result, hotel industry practitioners must upgrade their VR applications, to communicate to clients the features as real as possible. Further, with the integration of E-HRM, hotel employees can embrace a positive attitude towards VR which leads to improved employer branding. Additionally, to measure and enhance employer branding, the hotel’s strategic measures must be cascaded throughout the hotel operations through clearly defined objectives and performance targets for workers that represent E-HRM service quality and HRM effectiveness. These policies encourage employees to play their roles in a way that is consistent with the goals of the business. Finally, the study findings highlight the importance of rewarding workers both in monetary and non-monetary methods to inspire them to engage in VR web-based apps for HR purposes. To encourage workers to adopt a positive attitude towards VR, managers should solicit their feedback recommendations for resolving any emerging issues related to VR usage. Further, more practice would boost employees’ enthusiasm in using VR apps. It should be noted that research can provide more relevant recommendations to practitioners if they focus on competitive advantage at the individual level, rather than the corporate level (Kruesi & Bazelmans, 2022).

**Limitations and Future Research**

Although the results of this study provide empirical evidence that VR application contributes to employer branding in the hotel industry of Punjab, Pakistan, it should be noted that this study has limitations. First, the study’s findings concerning individual perceived VR quality and attitudes cannot be generalised since their virtual experience might vary depending on the device they use for the application (i.e., computer, tablet, smartphone with VR headset, etc.). Thus, future research should streamline the gadgets utilised for the virtual experience and compare their influence on the individual perceptions of VR quality. Furthermore, researchers interested in this area should include the diverse features of VR application to analyse the effectiveness of VR usage from individual viewpoints for a better VR experience which ultimately will lead to strong employer branding. Future studies should also include VR application usage training by HR departments to understand better how to enhance employer branding.

A further limitation of our overall study is that our research model did not incorporate contextual factors, for example, features and personal characteristics of participants (sex, age, digital capability, job type, etc.). Lastly, this study was only conducted with the hotels in the Punjab Province of Pakistan, which is a private
sector. Thus, one should proceed with caution when generalising the results, as we feel that theoretical generalisation is not unrealistic. However, statistical generalisations should be approached with caution.

More research on this issue is clearly needed, for more in-depth understanding of the determinants of employer branding, and future studies can be undertaken in other service industries as well to be studied with moderating variables like technology disruptions. The present study can also be extended by adding augmented reality as an independent variable to incorporate more novelty into the research topic. Theoretically, this study can be further expanded with the integration of theories such as IS Model, Theory of Planned Behaviour, Social Exchange Theory, Marketing Mix Theory and Resource-Based View. This study highlighted aspects of employer branding that have the greatest impact on organisational attractiveness. With this information, practitioners can incorporate and emphasise these aspects into the organisational culture. In this regard, future research can fruitfully explore gamification and virtual reality as tools of digital marketing. The study can be made more robust with the inclusion of mediating variables such as user engagement and user behaviour to understand the moderating effect of digital marketing.

Researchers believe that VR should be made a focal element when building engagement to boost the reputation of an establishment. While authentic feelings and aesthetic attractiveness currently have the greatest impact, with technological advancements, their effect may diminish. However, since VR usage has only recently increased at an exponential rate, little is known about the impact of these tasks and activities. As a result, more study is needed, particularly to gain a deeper understanding of how VR characteristics interact with the presence factors in a destination marketing setting (Yung, Khoo-Lattimore, & Potter, 2021).

Conclusion

The present study demonstrates that VR applications and E-HRM service quality are essential antecedents in enhancing employer branding in the context of Pakistan's hotel industry. The study looked closely at how VR and E-HRM strategy shape employee attitudes about VR, allowing them to embrace VR applications. The VR quality seems to be a major motivator in influencing employees to use VR applications. Further, findings also show that E-HRM service quality accurately describes the assessment of EHRM and HRM effectiveness, which then motivates employees to use VR apps to boost company branding.

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