

Investigating AI Integration Within the Indian Wedding Industry

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Abstract- The Indian wedding market has an estimated revenue of USD 50-75 Billion per annum and caters to about 10 million marriages every year. Though the industry has conventionally been based on personal recommendation and local supplier systems, online systems are quickly changing the process of the couple planning, as well as the manner in which suppliers act. The paper reviews descriptions of the use of artificial intelligence (AI) to reshape the factor dictating the success of the Indian digital wedding industry through the profiling of ten websites: WedMeGood, ShaadiSaga, WeddingWire India, The Knot Worldwide, Zola, Joy Wedding App, WeddingHappy, Appy Couple, Hitchd, and Loverly. Based on a method of secondary data, which involves the utilisation of industry reports, scholarly studies, and company correspondence, the research evaluates AI usages in vendor recommendation systems, personalisation algorithms, chatbots, image tagging, and budgeting software. The article is based on the Technology Acceptance Model and the Platform Economy theory. The results show that AI has optimised the search of vendors, personalisation of planning and engagement of users across the platforms. Nevertheless, the paper also finds some difficulties that are deeply unique to the Indian context, such as biasing algorithms, issues with data privacy and inequalities in access to digital technologies, and cultural diversity that cannot be easily generalized using algorithms.

Keywords: artificial intelligence, Indian wedding industry, digital platform, matching of vendors, platform economy, personalisation, WedMeGood.

I. INTRODUCTION

Indian weddings are over a series of ceremonies that spell ritual, cultural expression and social identity. A typical wedding can be between three and five days, hundreds of people are invited and it takes organizing of the services of photographers, caterers, decorators, makeup artists, musicians and various venue

providers. The Indian wedding is worth USD 50 to USD 75 billion annually and the country has a population of about 10 million weddings annually, thus it is ranked among the largest of its markets (KPMG, 2022) in the world.

Traditionally, discovery of vendors was based on personal referrals and networks. The price was shrouded in secrecy; quality was not always documented and the difference in information between the first-time planners and those that had planners previously was wide. Digital wedding sites started in the early 2010s, such as WedMeGood, ShaadiSaga and WeddingWire Indian branches of the same company, have altered this dynamic by centralizing vendor profiles, allowing couples to search portfolios, compare prices, and review. AI has taken the focus of the functionality of such platforms. Personalised recommendations of the vendor are produced by machine learning algorithms. NLP is the force behind chatbots which can help to plan a query. Image-based search of the vendors is possible through computer vision. Budgeting refers to software that uses the aggregate market data to generate estimates of costs. All these capabilities come together to facilitate the planning process, make it quicker, more personalised, and more fit to different user requirements.

However, adoption of AI in that respect is skewed. The digital environment in India is marked by a high level of inequality in its infrastructure in access to internet, mobile phone penetration, and digital literacy between urban and rural areas as well as between high and low-income groups. The cultural diversity of the country, which comprises dozens of different languages and hundreds of different regional customizations of the weddings, also presents the challenges of AI systems

that are planned with more homogeneous user bases. Globally, companies like The Knot, Zola, Joy, Appy Couple, Hitchd, and Loverly have created different sets of AI integration great strategies that can be used to provide helpful points of comparison.

II. REVIEW OF LITERATURE

Artificial PAI in Service Industry

Huang and Rust (2018) suggest that mechanical AI automatizes routine tasks, thinking AI gives support to data-driven decision-making, and feeling AI can perform the evaluation of emotional cues. Each of them is applicable to the wedding platforms: administrative automation will help in scheduling and communication, recommendation systems will assist in selecting a vendor, and conversation tools will progressively address the impressionable aspects of the process. The hospitality and tourism sphere, which is the closest to the wedding services area, researchers confirm that AI-enabled personalisation changes the competitive differentiation focus not on prices but on the quality of experiences (Buhalis and Sinarta, 2019). Tussyadiah (2020) determines the accuracy in recommendations and the ease of communication to be the key factors correlated with the user satisfaction in the realm of AI-based assistance during service implementation, which can be directly applied to the discovery of vendors on wedding websites.

Recommendation Economies and Systems

According to Ricci et al. (2015), there are three primary recommendation methods: collaborative filtering (based on aggregate user behaviour to recommend items), content-based filtering (between the features of the items and the user preferences), and hybrid systems (a combination of the two). Wedding platforms have a structural cold-start problem because most of the couples are only going to conduct one, or two, weddings in their lifetime, meaning that individual behavioural history is harder to utilise, and additional community-level information is needed.

Parker et al. (2016) define that platform businesses become valuable due to network effects: the more vendors, the more couples and the opposite. According to Dellarocas (2020), the data network effect is when data platforms gain more interaction data, improving the accuracy of the AI model, attracting even more

users, and creating additional data points. This vicious circle in favour of the incumbents and causing enormous entry obstacles. Rochet and Tirole (2003) also demonstrate that two-sided markets have the right mix of incentives that have to be controlled on both sides, to maintain growth, which can be seen in the way wedding sites strike the appropriate balance between charges to vendors and free services to couples.

Technology Acceptance Model

Technology acceptance model (TAM) presented by Davis (1989) assumes that the level of adoption of technology is dependent on perceived ease of use and usefulness. In AI-assisted wedding tools, the model predicts that couples can embrace the features when they believe they can see real gains in searching a vendor and efficient planning without having to prohibitively complex structures. Rauch et al. (2021) use an extended TAM to discourse event planning tools and discover the cleanliness of time and compatibility of suppliers are the most appreciated advantages, and privacy problems and the intricacy of the interface are the most significant limitations. Pavlou and Fygenson (2006) also reveal that ratings of the digital platform strongly determine an intention to transact, making review authenticity and data transparency an essential consideration of wedding platforms where adopting a vendor could incur high financial cost.

Digitalization of Markets of India

Studies of the digital economy in India have repeatedly focused on a simultaneous transformation in fast urban adoption and failure to close rural access divide that have been run on geographical, income, language, and education dimensions (Keniston and Kumar, 2004). In the case of wedding sites, it can be said that AI-enriched functions can be extended to a segment of couples with higher income and with higher urbanization, but not to the whole population of prospective customers. This is further complicated by the language diversity, where natural language processing engineers, which are the foundation of the chatbot and search feature, are significantly underdeveloped in Hindi and dialects of India compared to English.

III. PROBLEM STATEMENT

Although the scope and rate of digital transformation within the wedding business in India are substantial, there is not much scholarly work analyzing the specific use of AI and its impact on the vendors and brides and grooms. The majority of the available literature is related to AI in the neighboring areas of service, e.g., hospitality and e-commerce in general, and the specific characteristics of the wedding industry have not been adequately analyzed.

The situation involving Indian context poses certain problems that complicate the application of international research findings. The diversity is also extreme on a regional scale: the customs, the specialisations of the vendors, the preferences of the people and the price levels in each of the states, religious community or income groups. AI systems that outshine in major cities with concentrated data on vendors might be ineffective in small cities where there are few registrations and review history of the vendors. Indian weddings are also culturally rich, and such richness therefore makes it hard to get them down to the categorical inputs that most AI recommendation systems need.

There is additional complexity on the part of equity and privacy issues. Algorithms of recommendation can have a systematic preference of old vendors at the expense of new ones. The framework on the protection of data in India is still in the initial implementation stage with the Digital Personal Data Protection Act of 2023 tightening its security measures. Smaller vendors, who in many cases are solo traders who rely on the algorithms of platforms which they cannot control, will be structurally vulnerable but this has not been sufficiently analyzed in the literature. The paper fills these gaps by reviewing AI usage in ten online wedding sites; the focus is to find out what AI actually does, its impact on various interested parties, and what issues remain unsolved.

IV. ANALYSIS AND DISCUSSION

1. WedMeGood

Established in New Delhi in 2014, WedMeGood has become one of the most popular online wedding portals in India with tens of thousands of wedding

vendors listed in over fifty cities. The basis of its AI approach focuses on vendor matchmaking and visual discovery. The recommendation engine takes in couple inputs of location, date, budget, number of guests, and style preferences, and uses the aggregate behavioural data to process in order to generate rankings of vendor suggestions. One of the most impressive additions is the image-based search, where the photographs of vendor portfolios are categorized by aesthetic, allowing the couple to view by aesthetic appearance instead of category of the type of categories - this has worked especially well in the market where the aesthetic tastes of the region differ significantly. Natural language processing is also applied by the site to warn about suspect review suspicious activities, which makes the site even more trustworthy in a place where review manipulation is a familiar threat.

2. ShaadiSaga

ShaadiSaga is built on the idea of being a one-stop wedding planner and intends to cater to most of its key markets in northern India, including the identification of vendors, their budget management, and organization of events. It uses AI the most in budgeting: an AI-powered estimator will use aggregated pricing data across the vendor network to offer data-informed estimates, which are automatically recalculated as the couple changes the number of guests or location. The platform also customises its content feed based on browsing and profile information, including related articles on inspiration, and promotions with vendors. Vendor-facing analytics dashboards also report about profile engagement rates and the rate of inquiry conversion, meaning that a smaller vendor can modify their listing using data-visualized insights without having specialized marketing knowledge.

3. WeddingWire India

WeddingWire ventured to India under its global growth and later on it was absorbed by the WeddingPro parent company after it merged with the company of The Knot. The parent company has built the technical infrastructure with the benefit of which Indian operations have some capabilities that their competitors initially did not have. AIs are used in rankings of vendors to algorithmically rank the vendors by review score, responsiveness metrics, and

profile completeness, and to deliver personalised content based on the profile of the couple. Pattern recognition with the help of AI is applied to vendor verification systems in identifying inconsistencies in vendor information. The combination with the global data infrastructure of The Knot also allows vendors the ability to access market benchmarking analytics which is also a feature that will give Indian vendors competitive value as they can understand their relative position.

4. The Knot Worldwide

The Knot Worldwide, which has been established in 1996, provides tens of millions of couples with an approximately USD 700 million vendor marketplace, centered on The Knot and WeddingWire, every year (The Knot Worldwide, 2022). AI infrastructure which is founded on decades of behavioural data is utilized in vendor recommendation, natural language planning assistant and photo-based vendor search which compares inspiration images to content in the portfolio which are more or less visually similar. Lead scoring tools aid in prioritisation of incoming inquiries made by vendors. The data scale of the Knot gives it the benefit of AI model training that is difficult to achieve on other new platforms, and it makes it the most data-advanced platform at this point in this analysis and a benchmark of what an AI capability is as interpreted in the business of the wedding industry in an enterprise context.

5. Zola

Zola, as a gift registry company, was established at New York in the year 2013, and then it broadened its tasks to the wedding planning aspect. It has collected more than USD 600 million in the venture funding (Crunchbase, 2023) and has acquired a solid fan base of younger users. Its most unique application of AI is based on combining the data related to registries and planning: the product and experience interests of couples based on their page in a registry profile determine the sequence of vendor recommendations, creating finer personalisation dimensions than behaviour can create. AI-assisted copywriting and invitations to wedding websites and invitations are also proposed by Zola. Its multi-signal recommendation engine takes explicit preferences inputs, and implicit behavioural data with social

signals to generate contextually rich vendor recommendations.

6. Joy Wedding App

Lastly, Joy is an integrated wedding planning and guest management application that was established in 2015 but is distinguished by its focus on the guest experience. The applicability of AI is directed toward planning efficiency: the recommendations provided by machine learning are generated based on the date of the wedding, the number of guests, the devotion of the machine to a specific vendor, planning the activities are customisations but not general lists. Recommendation providers show the surface vendors and surfaces based on similar weddings in the dataset of the platform. Guest analytics follow the RSVP conversion, eating habits, and the communication interaction, which furnishes couples with practical logistic knowledge. The data provided by Joy on the guest-side, which is less actively gathered by other competitors that are rather detailed on couple to vendor interactions is a unique AI training object, which, as time goes on, improves its recommendation quality.

7. WeddingHappy

WeddingHappy is a mobile-first planning tool aimed at couples that prefer an easy task management and budgeting tool along with contacts organiser of the vendors without a comprehensive vendor marketplace. Its artificial intelligence uses are not extensive: the logic that is based on data produces a planning schedule through recommendations depending on the wedding date, and the tasks that are chosen; currently, deadlines change automatically as the plan changes. Pattern recognition is also integrated in the budget tracking to identify the abnormalities in spending and remind couples of deviations in category spending against budgets. The example set by WeddingHappy demonstrates that the application of AI in the wedding organization industry goes beyond the repeated recommendations of a vendor to include the transportation management where the task hierarchy and budget controls serve as a true value to couples when working on complex organization of multiple vendors on their own.

8. Appy Couple

Appy Couple was set up in 2012 to provide custom wedding apps and websites, as well as, planning and guest management platforms to allow couples to create branded digital wedding experience. AI works in the segment of personalisation and content curation: information on couples profile and planning behaviour is used to suggest design choices made in the wedding app and site: colours and layouts are proposed based on the identified aesthetic preferences. Interaction analytics on the personalised app of the couple can help to understand the information on the event that the guests look at more often, which is why communication can be optimised. The tools of Appy Couple are especially well applicable to the weddings of the diaspora community or destination events, where the challenge of communicating with various international guests is more a problem due to the need to manage the complexity of the situation with data-driven tools.

9. Hitchd

Defined as experience-based wedding registries, Hitchd is an Australian-based startup, which started its operations in 2017, allowing people to contribute honeymoon experience or other predetermined couple goals instead of traditional physical gifts. Its AI applications personalise the registry and contribution experience: machine learning works on browsing and contribution patterns to appear with the experience options based on the individual couple tastes, using aggregate data of other users with similar profiles. Intelligent communication applications will streamline the timing and content of invitations to engage with guests in the most effective way and decrease the level of friction, ensuring social sensitivity. The analytics dashboard of Hitchd gives instant access to registry activity and donation reporting. This one is not as vendor discovery-oriented as the registry area, but the personalisation model depicts how AI can serve as an addition to the niches in the wedding planning process.

10. Loverly

Loverly is an aesthetic wedding-related online source created in 2012 and it consists of published wedding photographs of photographers and decorators, as well as styled shoots, which are assembled in reference database which is searchable. Its AI features revolve

around computer vision and image categorisation: photos are labelled with style features, such as colour palette, setting type, season, and aesthetic category, allowing the couples to sort the photos into the aesthetics based on the visual features (not the textual one). The personalisation algorithms present content because of the images sorted by the saved images and the type of browsing, and this produces an even more personalized inspiration feed. In the case of vendors and photographers, Loverly offers an entry point in the inspiration form of planning, before selection of visible vendors begins, and more so to younger users who enter into the planning process visually with the help of social media.

V. RISKS AND CHALLENGES

Algorithmic Bias

The patterns replicated by recommendation system trained on historical data follow the pattern of the historical data. Sellers that have existed longer, have better ratings, and have increased advertising budgets are likely to be higher in the results of recommendations, irrespective of the quality difference between them and their more recent marketplace entries. This poses structural disadvantage to small players in Indian cities in tier-2 and tier-3 those with negative review records and limited data presence. The operators of the platform are advised to keep track of the recommendation outputs in terms of bias trends and instill corrective measures.

Data Privacy Concern

Wedding websites gather a lot of individually sensitive information: religious affiliation, family structure, financial plan, social groups, and extensive information about behaviour. The Digital Personal Data Protection Act in India of 2023 is a noteworthy enactment and the laws are still in the process of implementation and industry-specific guidelines still evolve. Users do not get a complete picture of data collection and sharing with advertising partners. It would be needed to establish an environment of transparent data governance, meaning available privacy policies, meaningful consent mechanisms, and data minimisation practices, to develop the trust that AI-enabled personalisation relies on in order to operate ethically.

Digital Divide in India

The advantages in platforms are not equally shared. Couples with smartphones and digital literacy living in big cities are able to use AI-powered functionalities to the fullest. There is a true access barrier on the side of rural users, older age groups, and users more at ease in regional languages, especially with the preponderance of English-language interfaces. Small vendors who do not have specific marketing space might not be able to sustain the active online presence that is rewarded by algorithmic placement. Individual decisions about the design of platforms that can improve the participation load, such as simplified profile features, regional language interfaces, and accessible analytics can work to curb such disparities. Building constraints in Culturally Diverse Markets.

AI systems implemented on more homogenous markets might be inefficient in the Indian extreme cultural diversity. Hindu wedding in Rajasthan, Tamil Brahman wedding, Punjab Sikh wedding, and Muslim nikah assumptions of various ritual demands, vendor specialisation, aesthetic standards, timing constraints are inputs in categorical recommendation that is difficult to quantify. Most significant differences are represented tacitly and by images more than by writing. To overcome these constraints, culturally sensitive AI development needs to be created based on real consultation with the local populations, rather than as an extension of what is already available to other languages.

VI. CONCLUSION

In this paper, the author has analyzed the role of AI in the digital wedding industry in India by reviewing secondary data about ten platforms. AI is not a fringe benefit of such platforms, but a structural base of their competitive advantage and value proposition to users. In vendor matchmaking, personalisation algorithms, chatbot support, image search and budgeting tools, AI is having a beneficial impact on the process by which couples go through a complicated, high-stakes planning process.

The ten platforms are various AI strategies. WedMeGood, and ShaadiSaga have a chance to resolve the two goal challenges of the Indian market - fragmented supply of vendors, and regional aesthetic

variation. The Knot and Zola indicate what can be achieved on mature markets due to sustained accumulation of data. Joy, WeddingHappy, Appy Couple, Hitchd, and Lovely demonstrate that AI is not just useful during the discovery of a vendor, but throughout the entire planning process, including visual inspiration and guest management, budgeting, and gifting the experience.

The flywheel dynamic of data has a preference towards incumbent in all segments and helps to consolidate the market, which has the effect of dependency and choice of vendor. The described threats, including algorithmic bias, data privacy, access inequality digitally, and cultural mismatch, are not some technical issues, but social and ethical aspects of platform design that need to be actively considered.

Their specific priority in the context of India must be paid due to the magnitude of the diversity of the market and uneven share of access to digital devices. A number of future research directions are revealed. First, the main empirical research, such as a survey or interview of the vendors and couples living and working in various regions of India, would give proof on how AI functionality is applied in practice to different populations. Second, questions concerning the algorithmic equity raised here would be a subject of longitudinal research into the impact of AI integration on vendor economics over the time. Third, cross-cultural studies would create a framework of the design principles of AI that can be generalised and those that need specific localisation.

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