IMPACT OF ARTIFICIAL INTELLIGENCE BASED CHATBOTS ON BRAND AWARENESS AND BRAND IMAGE IN PAKISTAN

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Abstract

Brands employing Artificial Intelligence based chatbots to resolve the queries of customers. Chatbots being functional and empathetic help in developing brand awareness and brand image. The current research tried to examine the relationship of AI based functional and empathy chatbots with brand awareness and brand image in Pakistan. The current research employed quantitative research methodology and cross sectional data collected through online survey using questionnaires via online Google forms from students of two universities in Multan Pakistan. The sample size had been 107, and PLS-SEM based SmartPLS 4 software used for data analysis. The descriptive analysis showed substantially more males participated in survey than females. The measurement model confirmed through factor loading>0.7, VIF<3, AVE>0.5, representing discriminant validity. The cronbach's alpha and composite reliability confirmed reliable factors involved. The structural model showed that functional and empathy AI based chatbots positively influence brand awareness and brand image. The results showed that the functional AI based chatbots more strongly and positively impact brand awareness than brand image.

Similarly, the empathy AI based chatbots more strongly and positively impact on brand image than brand awareness. Finally, the current research provided an empirically tested and verified model of AI based branding through chatbots using varying functional (efficiency) and empathy (emotions) factors.
Keywords: *Artificial Intelligence, AI functional chatbots, AI empathy chatbots, brand awareness, and bran image.*

INTRODUCTION

This has been an era of artificial intelligence (AI) technology (Patel &Kaur, 2025). AI sheds light on and transforms almost all aspects of business world (Alkishri et al., 2025; A. Singh, 2025). Most of the firms shifting their operations from classical technology tools to AI driven business operations. Many organizations in the world focus on AI to foster branding (Kumar, 2025, p. 87). AI influences brand management (Dong, 2025). Brand management emerged as a separate field from marketing in 1985 from the inception of various brand management approaches namely positivistic paradigm (company controls the brand)-economic approach, identity approach, consumer-based approach, personality approach, and interpretivistic paradigm (marketer and customer both play role in development of a brand) -relational approach, community approach, cultural approach, and sensory approach (Heding et al., 2008, 2020). All these approaches have their own functions and deal with contemporary brand management issues.

After the introduction of artificial intelligence, the brand management has come across new challenges and avenues to deal with and address the emerging trends (Khoshtaria et al., 2025; Olajumoke et al., 2025). An important feature of artificial intelligence has been the use of chatbots (functional and/or empathy) as a tool to develop strong brand in customer mind (Shao et al., 2025; Touti & Bartoli, 2025). Such a machine learning-generative artificial intelligence (AI) based chatbots helping organizations worldwide to build, maintain, and sustain new or already existing brands (Malik & Asim, 2025).

Researchers such as Kim et al. (2021), Rietz et al. (2019), Liu-Thompkins et al. (2022), Shao et al. (2025), and Suh et al. (2025) have consensus that

such a new tool being functional in nature supported the efficiency and operational side of brand, whereas, being empathetic addressed emotional side of brand in customer mind. Nevertheless, although usage of chatbots for branding at nascent stage (Touti & Bartoli, 2025), various organizations are focusing upon and yielding benefits from their utility. Functional AI focuses upon the utility of chatbots and Empathy AI focuses upon the emotional content and context of chatbots. Companies have been incorporating both features while branding (Chan & Sun, 2024; Rietz et al., 2019).

Brand management comprises of two famous views specifically brand awareness and brand image (Laksamana et al., 2024). Brand awareness focuses upon building familiarity of brand with customer , whereas, brand image focuses upon building a picture in the mind of customer about brand (Keller et al., 2011). Brand awareness together with brand image develop customer brand knowledge (Chen, 2019). Brand knowledge provides support and helps the customers to buy the new brand as well as to be loyal to existing brand. Kevin Lane Keller claimed that brand knowledge played a pivotal role in branding since its inception in the year 1993 (Keller, 1993).

The usage of Chatbots to build strong brands has been a novel practice. Most of the firms worldwide in general for example Google and WhatsApp, and Pakistan in particular, just like, Banking sector-Habib Bank Limted (HBL) Pakistan and Meezan Bank Pakistan (Javed, 2023), Faysal Bank, Bank Alfalah (Zulfiqar et al., 2024), Telecom sector-Telenor Pakistan (named Tania) and Jazz Pakistan, E-commerce sector-Daraz Pakistan (Javed, 2023), University libraries (Ali et al., 2025) focusing upon the usage of Chatbots to address the issues of customers ultimately working as an agent to improve their existing brand. Nevertheless, Daraz Pakistan has been using even native languages of Pakistan other than English and Urdu languages in chatbots for the convenience of their customers (Javed, 2023). Such a new trend emphasizes the need to develop and provide a holistic and empirical model in relationship of functional and emotional AI, and branding.

Previous studies recommend to work upon multilingual chatbots being functional aspect (Javed, 2023), emotions, and ethics (privacy and data security) being empathy aspects of chatbots for branding (Malik &Asim,

2025; Nam et al., n.d.; Orden-Mejía et al., 2023)of banks (Laksamana et al., 2024a), varying industries (Olajumoke et al., 2025)to build strong brand awareness and image (Khoshtaria et al., 2025)in customer mind.

LITERATURE REVIEW

The most important feature in brand management model has been brand awareness and brand image resulting into brand loyalty (Keller, 1993; Laksamana et al., 2024b). Brand awareness and brand image have been mental construal of human mind (Keller, 1993)which develop through classical and modern AI based branding (Dong, 2025). The literature about Artificial Intelligence commonly written as artificial intelligence found to be scarce. No previous work has provided a holistic, comprehensive and long term influence of AI tools on brand awareness and brand image so far (Dong, 2025).

Social exchange theory provides the bases for current research (Cropanzano& Mitchell, 2005; Malik &Asim, 2025) as brand provide solution to the queries of customers through chatbots conversation, while, customers purchase the products/services of that brand in exchange for the chatbot services (Malik &Asim, 2025).

AI CHATBOTS-FUNCTIONAL AND EMPATHY BASED

Chatbots have been one of the famous AI tools. Chat bots stands for 'chat' means conversation and 'bots' derived from robots (W. B. Kim &Hur, 2024). It shows the conversation with robots. Most of the firms worldwide adopting chat bot AI based technology to brand their products (Touti&Bartoli, 2025). These chat bots works upon two notions function based chat bots (J. Kim et al., 2021; Rietz et al., 2019)and empathy based chat bots (W. B. Kim &Hur, 2024). Function based chat bots simply address queries of customers and consumers as per previous training and efficiency (Rietz et al., 2019) but lacks human emotions and empathy . Whereas, empathy based AI chatbots being context centred focus upon emotional state of queries as well (Truong & Chen, 2025; Wardhana et al., 2021).

The functional AI based chatbots have various dimensions but not limited to Informativeness- chatbot provided accurate information (Orden-Mejía et al., 2023), responsiveness- chatbot responded promptly to customer

questions, reliability- chatbot consistently provided reliable service (Yun & Park, 2022), problem-solving- chatbot effectively helped solve customer's problem, customization- chatbot offered solutions that felt tailored to customer specific needs (Rizomyliotis et al., 2022), conversational efficiency- chatbot was easy to understand and interact with, accessibility- chatbot being easy to access and use (Borsci et al., 2022), AI chatbot service quality- chatbot delivers high-quality service (Chen et al., 2022).

The Empathy AI based chatbots have dimensions but not limited to perceived empathy- chatbot understood customer needs and feelings during interaction, chatbot's responses made customer feel being understood (Fang et al., 2025; Liu-Thompkins et al., 2022; Orden-Mejía et al., 2023), perceived empathy (emotional contagion/synchronicity)- chatbot adapted its tone or language to match customer's emotional state (Fang et al., 2025; Liu-Thompkins et al., 2022), proactive identification of needs- chatbot seemed to proactively identify what customer might need, Responding to Frustration- chatbot handled customer frustration well (Liu-Thompkins et al., 2022), affective state empathy- a sense of connection or warmth towards the AI during conversation, cognitive state empathy- a feeling that AI understood customer perspective, associative state empathy- feeling a sense of shared experience with the AI (Fang et al., 2025), digital empathy-a feeling that chatbot communicated in a way that showed care and understanding (Suh et al., 2025).

BRAND AND BRAND KNOWLEDGE

American Marketing Association (AMA) described a brand could be any name, logo, symbol, layout, or other characteristic that classify one seller's goods or services from another. The new definition of a brand has been modified to include "any other feature" in order to include intangibles (Wood, 2000).Brand knowledge created the differential effect in the minds of customers about branded and non-branded products and services (Keller, 2003; Keller et al., 2011).

BRAND AWARENESS

Brand awareness is the know-how of people to recall and link a brand from memory to its product or service category when they see the brand name, logo, design, slogan, or any other aspect associated with a specific

brand name (Kim, 2012).

Brand awareness formed through two dimensions brand recognition and brand recall. Brand recognition refers to having familiarity with the brand while seeing the clue about brand. Brand recall refers to conscious effort to bring the brand from memory into conscious mind with or without aid about the brand. Both recognition and recall can be aided or without aid (David, 1996; Keller, 1993).Additionally, it has been determined that brand awareness precedes brand image and associations. To have a brand image or associations, consumers must be aware of the brand.

BRAND IMAGE

Reynolds (1965) believed that an image is a mental picture held by a customer, which is formed through the selection of cues from a multitude of available clues and is constructed through the skilful organization of those chosen cues. Aaker (1991)said that brand image refers to a set of associations, typically assimilated in some useful mode. Kotler and Keller (2006) stated that brand image refers to customer beliefs posited about a specific brand. Brand image refers to a picture about the brand in human mind. This image has been subject to its strength, favourability, and uniqueness of associations in human mind. The strong, favourable, and unique associations and links build up brand image (Keller et al., 2011; Sugita &Handayani, 2024; Wei, 2024).

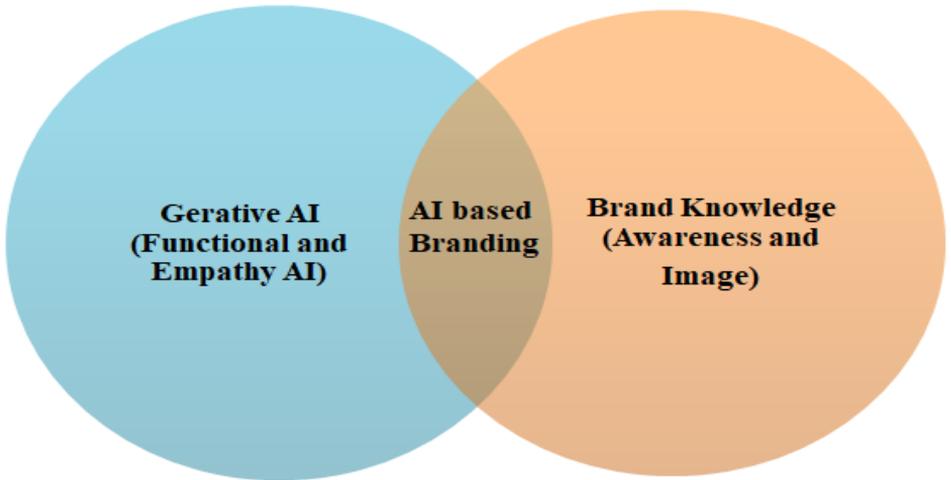## ARTIFICIAL INTELLIGENCE BASED CHATBOTS AND BRAND KNOWLEDGE

The literature about the relationship of artificial intelligence and brand management is still at nascent stage (Kumar, 2025, p. 91; Touti & Bartoli, 2025). Few previous studies (Dong, 2025; Laksamana et al., 2024b; Shao et al., 2025; Touti&Bartoli, 2025) have discussed the usage of AI agents in branding.

Laksamana et al. (2024) claims chatbots enhance awareness, image, loyalty, and overall equity about a brand, and loyalty along further study of these AI's role in brand management. No previous study has worked upon the relationship of functional and empathy Chabots on brand awareness and brand image. There is research gap about the relationship of function and

*artificial empathy AI based Chabot influencing brand knowledge (awareness & image). Since, AI and brand management being two separate disciplines have scarcely been into collaboration as illustrated in **Figure 1,***

Figure 1

     Fusion of AI and Brand Knowledge: AI based Branding

Framework

    The artificial intelligence based Chabot has two types functional and empathy. The firms have been focussing on digital chatbots as an application of generative AI to provide solution to the queries of customers and developing brand knowledge in minds of customers (Dong, 2025). Chatbots have been functional (utility) and empathetic (emotion) in nature (Kim et al., 2021). Classical approach in Generative AI used functional chatbots (Rietz et al., 2019) which focused upon efficiency to perform various functions of chatbots.

    Whereas, modern business approach further includes both function and empathy into chatbots (DeZao, 2022; Truong & Chen, 2025) which builds emotions in chatbot while in conversation with customers which have positive affect in building brand awareness (Khoshtaria et al., 2025; Laksamana et al., 2024) and brand image (Khoshtaria et al., 2025) among customers. Based upon above discussion it can be said that,

    H_1: Functional AI Chatbots positively and significantly impact brand awareness.

H_2: Functional AI Chatbots positively and significantly impact brand image.
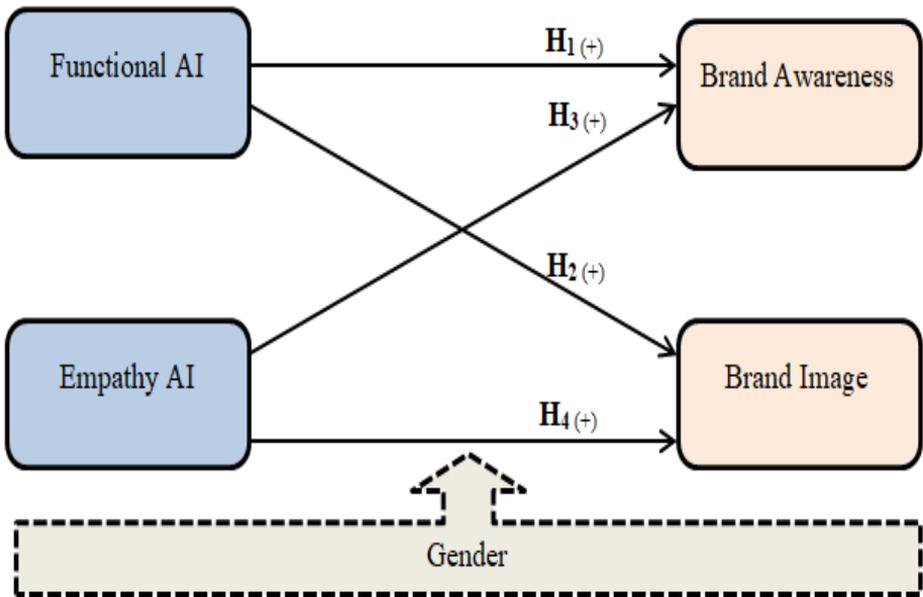
H_3: Empathy AI Chatbots positively and significantly impact brand awareness.

H_4: Empathy AI Chatbots positively and significantly impact brand image.

Based upon above discussion, following schematic diagram developed as,

Figure 2

Framework: functional AI and empathy AI impacting brand awareness and brand image alongside gender's role

RESEARCH METHODOLOGY

The current research adopts positivist approach and quantitative research methodology (Adeniran & Fakunle, 2025; Ishaq, 2021; Saunders & Lewis, 2017). The deduction research approach (Szabó et al., 2025) adopted to find what is the impact of functional and empathy AI based chatbots on brand awareness and brand image. The survey conducted

through online Google form (questionnaire) to collect primary data from respondents (Bihu, 2021; McKinlay, 2020; Schmeling & Fracasso, 2025; Smith, 2025). The scales adopted and adapted from the previous works table 1 explains,

TABLE 1

Various constructs, dimensions, and scales

Constructs/Dimensions	Items	Reference (s)
Functional AI Chatbot		
Informativeness	The chatbot provided accurate information. The chatbot provided all the necessary details I needed. The information provided by the chatbot was relevant to my query.	(Orden-Mejía et al., 2023)
Responsiveness	The chatbot responded promptly to my questions.	(Yun & Park, 2022)
Reliability	The chatbot consistently provided reliable service.	
Problem-Solving	The chatbot effectively helped me solve my problem.	
Customization	The chatbot offered solutions that felt tailored to my specific needs.	(Rizomyliotis et al., 2022)
Conversational Efficiency	The chatbot was easy to understand and interact with.	(Borsci et al., 2022)
Accessibility	I found the chatbot easy to access and use.	
AI Chatbot Service Quality	Overall, the chatbot delivered high-quality service.	(Chen et al., 2022)
Empathy AI Chatbot		
Perceived Empathy	I felt the chatbot understood my needs and feelings during our	(Fang et al., 2025; Liu-

	interaction.	*Thompkins et al., 2022; Orden-Mejía et al., 2023)*
Perceived Empathy (Emotional Contagion/	*The chatbot's responses made me feel understood.*	*(Fang et al., 2025)*
Synchronicity)	*The chatbot adapted its tone or language to match my emotional state.*	*(Fang et al., 2025; Liu-Thompkins et al., 2022)*
	The chatbot's interaction made me feel positive or even smile.	*(Orden-Mejía et al., 2023)*
Perceived Empathy	*I felt the chatbot was acting "in sync" with my emotions.*	
Proactive Identification of Needs	*The chatbot seemed to proactively identify what I might need.*	*(Liu-Thompkins et al., 2022)*
Respondinto Frustration	*The chatbot handled my frustration well.*	
Affective State Empathy	*I felt a sense of connection or warmth towards the AI during our conversation.*	
Cognitive State Empathy	*I felt the AI understood my perspective.*	*(Fang et al., 2025)*
Associative State Empathy	*I felt a sense of shared experience with the AI.*	
Digital Empathy	*The chatbot communicated in a way that showed care and understanding.*	*(Suh et al., 2025)*
Brand awareness		
Recall	*My brand is well-known.*	*Keller (1993), Yoo et al. (2000)*

Recognition	*My brand's logo is instantly recognisable.*	*Keller (1993), Yoo et al. (2000), and Pinar et al. (2014)*
Top of Mind	*My brand is among the first to come to mind when one thinks of all brands in the country.*	*Builet al. (2008)*
	I know what my brand looks like.	
	I can recognise my brand among other competing brands.	
Brand image		
Favourabilityof associations	*My brand has a good reputation and image among customers.*	*Keller(1993),Bravo et al. (2009), and Hong and Lee (2012).*
Strengthof associations	*My brand makes a good impression to me.*	
Uniqueness of associations	*My brand is highly committed towards customers.*	
	My brand consistently contributes to the society.	
	The managers and staff of my brand in general, are friendly and warm.	

Moreover, a non-probability sampling technique-simple random sampling technique used to collect data (Emerson, 2015) since population size has been unknown. The primary data collected cross sectional (Hussain et al., 2025; K. Singh et al., 2023) from students of University of Education Lahore, Multan campus, Pakistan and Bahauddin Zakariya University Multan, Pakistan (Hamed et al., 2022)who use chatbots of various brands in Pakistan which are branding their products and services including banks (HBL, Bank Alfalah, and Meezan Bank PVTLtds), telecom companies (Jazz and Telenor), and Daraz.Pk addressing customer queries through chatbots.

In order to analyse the data, partial least squares structural equation modelling (PLS-SEM) technique (Hair Jr et al., 2021; Haji-Othman et al., 2024; Subhaktiyasa, 2024)used to estimate the measurement model and structural model through SmartPLS 4 software (Ringle, C. M., Wende, S., and Becker, J.-M., 2024). The reliability of data measured through Cronbach's alpha and composite reliability (Arora et al., 2025; Cheung et al., 2024; Hlynsson et al., 2025; Ye et al., 2025). Whereas, convergent and discriminant validity (Emerson, 2015; Hlynsson et al., 2025; William, 2024)of data measured through factor loadings, average variance extracted, and Fornell-Larcker criteria respectively (Hair Jr et al., 2021).

PLS-SEM helps in finding the measurement model and structural model simultaneously (Hair Jr et al., 2020). Moreover, bootstrapping technique used to create subsamples from the available data sets in order to normalize the data (Hair Jr et al., 2021; Lodhi et al., 2017). The path coefficients (β) bootstrapped at 5000 subsamples (Guenther et al., 2023; Ringle, C. M., Wende, S., and Becker, J.-M., 2024; Sarstedt et al., 2024) in order to get better estimation.

DATA ANALYSIS

The research questionnaire distributed online through Google forms among 150 students at the University of Education Lahore, Multan Campus and Bahauddin Zakariya University Multan. Almost 107 students duly filled the questionnaire making the response rate 71.33%. The response rate had been suitable as minimum response rate required for PLS SEM based estimation through software Smart PLS 4.1.0.9 requires minimum 30 sample size (Hair Jr et al., 2021; Ringle, C. M., Wende, S., and Becker, J.-M., 2024).

RESULTS
DESCRIPTIVE STATISTICS

Table 2 shows the number of male participants have been 71.0% and female participants have been 28.97%. More male students participated than female students in the survey. The age group of 18-22 years have been the highest participation with percentage of 71.02%. The highest numbers of participants have been from graduate degree program in universities with percentage of 88.78% as shown in Table 2 below,

Table 2

Demographic profile

Variable	n	%
Gender		
Male	76	71.02
Female	31	28.97
Age		
18-22	76	71.02
23-27	25	23.36
28-32	1	0.93
33 and above	5	4.67
Education		
Graduation	95	88.78
Master	9	8.41
Doctorate	3	2.80

MEASUREMENT MODEL (OUTER MODEL)

The SmartPLS 4 software used for data analysis. The data analysis consists of descriptive statistics, measurement model (outer model) and structural model (inner model) (Ringle, C. M., Wende, S., and Becker, J.-M., 2024; Subhaktiyasa, 2024). The bootstrapping technique used at 5000 subsamples to verify the paths from functional chatbot (FCB) and empathy chatbot (ECB) to brand awareness (BA) and brand image (BI). Boosts trapping technique also supports in normalization of abnormal data by increasing the sample size (Hair Jr et al., 2021). Moreover, those factor having factor loadings above 0.5 included for further analysis. The factor

loadings <0.5 excluded from further analysis. Therefore, items FCB2, FCB7, FCB9, ECB2, ECB3, ECB4, ECB9, and ECB10 excluded from further analysis as having values < 0.5. Similarly, minimum two items being necessary for latent construct measurement (Hair, Sarstedt, Pieper, et al., 2012). Reliability refers to consistency of results over the period of time even if the tests being repeated show same results (Saunders, 2011). Reliability measured through cronbach's alpha and composite reliability found to be greater than minimum threshold value of 0.7 in all cases as mentioned in table 2 (Hair et al., 2019). Likewise, validity refers to the relevancy of indicators with the construct (Bougie & Sekaran, 2019). The convergent validity refers to the indicators showed greater correlation with its own construct than that of others measured through average variance extracted (AVE) (M. N. Saunders, 2011). Table 2 shows that the values of AVE found to be ≥ 0.5, established the convergent validity. The value of AVE ≥ 0.5 means a latent construct explained more than half of variation in its factors (Hair et al., 2019). The variance inflation factor (VIF) measures issue of multicolinearity, whether the indicators (outer model) of constructs showing high correlation with one another, therefore, resulting into unreliable results. The VIF value should be <5 (Ringle, C. M., Wende, S., and Becker, J.-M., 2024) . The Table 2 shows that all the items showing VIF<3, therefore there had been no multicollinearity issue in the data.

Table 2

Factor Loadings, Reliability, Convergent Validity

Construct	Unit	VIF before deletion	Loadings before deletion	VIF after deletion	Loadings after deletion	α	Composite reliability (rho_c)	AVE
Functional chatbot	FCB1	2.055	0.756	1.902	0.775			
	FCB2	1.488	0.630	-	-			
	FCB3	1.791	0.717	1.741	0.725			
	FCB4	1.909	0.729	1.715	0.724			
	FCB5	1.959	0.764	1.945	0.782			
	FCB6	2.236	0.756	1.989	0.780			
	FCB7	1.507	0.503	-	-			
	FCB8	2.048	0.776	1.940	0.794			
	FCB9	1.888	0.623	-	-			
	FCB10	2.226	0.772	1.820	0.775	0.881	0.907	0.582
Empathy chatbot	ECB1	2.806	0.748	1.774	0.725			
	ECB2	2.178	0.602	-	-			
	ECB3	2.147	0.716	-	-			
	ECB4	2.326	0.672	-	-			
	ECB5	2.234	0.767	2.001	0.799			
	ECB6	2.850	0.811	2.412	0.832			
	ECB7	2.423	0.748	2.136	0.785			
	ECB8	2.029	0.687	1.650	0.688			
	ECB9	2.364	0.790	-	-			
	ECB10	2.680	0.805	-	-			
	ECB11	2.159	0.733	1.611	0.744	0.857	0.893	0.584
Brand awareness	BA1	2.142	0.824	2.142	0.823			
	BA2	1.821	0.780	1.821	0.775			
	BA3	1.935	0.769	1.935	0.773			
	BA4	2.350	0.783	2.350	0.786			
	BA5	2.108	0.766	2.108	0.766	0.845	0.889	0.616
Brand image	BI1	1.422	0.693	1.422	0.703			
	BI2	1.908	0.802	1.908	0.795			
	BI3	1.837	0.798	1.837	0.790			
	BI4	1.734	0.781	1.734	0.785			
	BI5	1.720	0.756	1.720	0.759	0.825	0.877	0.588

Discriminant validity ensures that constructs have been distinct from one another (Cheung et al., 2024; Hair et al., 2019). HTMT (Hetrotrait-Monotrait) ratio value < 0.85 and Fornell Larcker criteria used to ensure discriminant validity (Subhaktiyasa, 2024). Table 3 described that HTMT ratios found < 0.85, showed strong discriminant validity.

Table 3

HTMT Ratio

Constructs	BA	BI	ECB	FCB
BA				
BI	0.822			
ECB	0.661	0.662		
FCB	0.706	0.637	0.761	-

Fonell-Larcker Criterion refers to the square root of AVE of a construct, and it should be more with a construct itself than that of others (Cheah et al., 2024). Table 4 shows that all the constructs showing higher correlation value with themselves than others, therefore, discriminant validity established.

Table 4

Fornell-Larcker Criterion

Constructs	BA	BI	ECB	FCB
BA	0.785			
BI	0.695	0.767		
ECB	0.581	0.567	0.764	
FCB	0.624	0.551	0.669	0.763

Structural model (inner model)

The structural model (inner model) tests the of relationships (hypotheses) between the constructs through coefficient of determination (R^2), correlation analysis and path analysis (Cheung et al., 2024). It states that the coefficient of determination (R^2), correlation analysis and the path analysis help to develop the structural model (inner model) between the constructs.

Coefficient of determination (R^2) (Hair Jr et al., 2021) shows 43.8% variation in BA due to FCB and ECB, whereas, rest of the 56.2% variation in BA due to some other unknown factors. Similarly, 37.5% variation in BI due to FCB and ECB, whereas, rest of the 62.5% variation in BI due to some other unknown factors.

Correlation refers to a statistical measure which explains the nature and strength of relationship between two variables (Hair, Sarstedt, Ringle, et al., 2012). Table 5 shows that all the variables FCB, ECB, BA, and BI have strong positive correlation. The positive and the strongest correlation exists (r = 0.695) between brand awareness and brand image. Correlation analysis results found statistically significant at p value < 0.001.

Table 5

Correlation

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	values
BI <-> BA	0.695	0.698	0.055	12.537	.000
ECB <-> BA	0.581	0.593	0.090	6.420	.000

ECB <-> BI	*0.567*	*0.578*	*0.093*	*6.086*	*.000*
FCB <-> BA	*0.624*	*0.631*	*0.083*	*7.539*	*.000*
FCB <-> BI	*0.551*	*0.562*	*0.074*	*7.427*	*.000*
FCB <-> ECB	*0.669*	*0.671*	*0.067*	*9.939*	*.000*

*Note: *p<0.05; **p<0.01, ***p<0.001*

Hypotheses testing and path coefficients

The path analysis in table 6 and figure 3 shows that the path coefficients of variables FCB to BA (β=0.427, p=0.002) found to be statistically significant, so the hypothesis H1 accepted. One unit increase in functional chatbot brings about 0.427 units increase in brand awareness. Similarly, the path from FCB to BI (β=0.311, p=0.017) found to be statistically significant, so the hypothesis H2 accepted. One unit increase in functional chatbot brings about 0.311 units increase in brand image. The path from ECB to BA (β=0.296, p=0.042) found to be statistically significant, so the hypothesis H3 accepted. One unit increase in empathy chatbot brings about 0.296 units increase in brand awareness. The path from ECB to BI (β=0.359, p=0.016) found statistically significant, so the hypothesis H4 accepted. One unit increase in empathy chatbot brings about 0.359 units increase in brand image.

Table 6

Hypotheses testing and path coefficients

Hypotheses	Patcoefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics(|O/STDEV|)	Values	Result
H1	*FCB -> BA*	*0.427*	*.426*	*0.141*	*3.025*	*.002*	*Supported*
H2	*FCB -> BI*	*.311*	*.313*	*0.130*	*2.397*	*.017*	*Supported*
H3	*ECB -> BA*	*.296*	*.305*	*0.145*	*2.036*	*.042*	*Supported*
H4	*ECB -> BI*	*.359*	*.368*	*0.148*	*2.421*	*.016*	*Supported*
	Brand awareness R^2 =0.438						
	Brand image R^2 =0.375						

Figure 3

PLS SEM Path Analysis
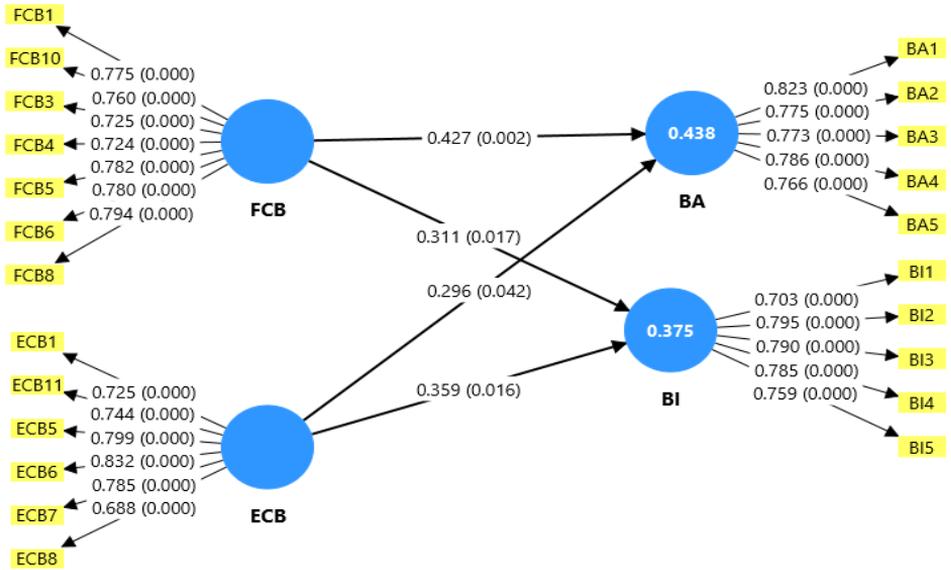
DISCUSSION

The relationship of functional and empathy based chatbots with brand awareness and brand image empirically tested and build in current research. All the aforementioned hypotheses have been accepted. Functional AI based chatbots positively impact brand awareness. Similarly, Empathy AI based chatbots positively impact brand awareness. Moreover, Functional AI based chatbots positively impact brand image. Empathy AI based chatbots positively influence brand image. The research findings also corroborate with the findings of previous studies Khoshtaria et al. (2025), Liu-Thompkins et al. (2022), Nam et al. (2025), Olajumoke et al. (2025), and Suh et al. (2025). The current research supports the generalization of social exchange theory. The services provided by functional and empathy chatbots develop brand awareness and brand image among customers, which payback in terms of strong, favourable and unique associations with the brand.

Functional AI chatbots as a variable operationalized through its

dimensions Informativeness, responsiveness, reliability, problem solving, customization, overall service quality. These dimensions help in building cognitive process and memory structure linked with the brand. Complete and reliability information develop a perception among customers that the brand providing relevant information, ultimately strengthens brand recognition and recall (Keller, 1993; Orden-Mejía et al., 2023) . As this process repeats, the brand turns into a noticeable entity, resulting into top of mind awareness. Responsiveness eases customer cognitive effort in information search. The rapid response of chatbots develops a perception of the brand being dependable and proficient (Q. Chen et al., 2022; Yun & Park, 2022). Another dimension of functional chatbots- problem solving capacity along customization, help in building perceived usefulness of chatbots in accordance with customer needs and wants, strengthens customer cognitive process about a brand (Rizomyliotis et al., 2022). Therefore, such functional chatbot factors contribute towards building brand awareness.

Functional chatbots build and maintain brand image. The premium services like efficiency, minimum response time, reliability of information, and customization of information provided by functional chatbots translates into building strong, favourable, and unique set of associations in customer mind, ultimately building strong brand image. These findings found to be in alignment with previous work validating functional chatbots influence brand image (Laksamana et al., 2024a; Touti & Bartoli, 2025). The current research also supported the technology acceptance model through usage of chatbots and their acceptance by customers (Arachchi & Samarasinghe, 2025; Chowdhury et al., 2024). Therefore, customers perceived functional and empathy chatbots useful to resolve their queries in a more efficient and empathetic way.

Perceived empathy and affective warmth generate feelings of customer care, trust, and relationship which are basic ingredients of brand image (Fang et al., 2025; Kotler & Keller, 2006; Olajumoke et al., 2025). Cognitive empathy and associative empathy aid customers to realize that the brand understands their requirements, stirring symbolic and relational brand senses. Ultimately, digital empathy provide care for customers as if they have been communicating with humans instead of robots, results into

perceived humanization of brand (Suh et al., 2025). Managing customer frustration and recognizing what customer wants help in building brand image over and above just providing efficient solutions. Such an approach creates brand meaning through customer relationship management (Heding et al., 2020). So empathy based chatbots dimensions build and develop strong, favourable, and unique set of brand associations, marking a relatively better brand image. The current research fulfils the research gap identified in previous work of Laksamana et al. (2024) state that AI based chatbots enhances brand awareness, image, equity, and loyalty along further recommendation to examine the influence of AI based chatbots on brand management. No previous study has worked upon the relationship between functional and empathy chatbots, and brand awareness and brand image. The current research fulfilled this research gap, and the first study to differentiate between functional chatbots and empathy chatbots and their separate influences on brand awareness and brand image. The gender based participation of females has been far less in the survey than the male participants. Logically, the online Google forms sent through male students, so male students have distributed mostly the online Google form link within male students and far less shared the online survey link with female students, hence the female participation in the survey reduced. Another reason for the females participated less in online survey as compared to males usually as previous study assert that females participate less in online surveys as compared to males (W. G. Smith, 2008). It asserts that gender played an important part in the relationship of AI based chatbots and brand awareness and brand image.

Another aspect has been the variation in the paths from FCB-BA, FCB-BI, ECB-BA, and ECB-BI respectively. The path from functional chatbot to brand awareness has been stronger than the path from empathy chatbot to brand awareness. Similarly, the path from empathy chatbot to brand image has been relatively stronger than the path from empathy chatbot to brand image. It shows functional chatbot has been stronger predictor of brand awareness and empathy chatbot has been stronger predictor of brand image. The customers while using functional chats bot become familiar with the

brand but efficiency mechanisms of chatbot help customers in brand recognition and brand recall from memory. Logically, the efficiency, reliability, accuracy, and correctness and prompt information get customers more familiar with the brand so functional aspect builds more recognition and recall dimensions of brand awareness than the dimensions of brand image. Whereas, the set of strong, favourable, and unique set of associations being dimensions of brand image built stronger through emotional attachment of customer with the brand than with function customer relationship. Empathy being an emotional aspect stimulates and develops a set of associations with the brand forming stronger brand image than brand awareness. Overall, both functional AI based chatbots and empathy AI based chatbots influence awareness and image of a brand.

IMPLICATIONS

Various kinds of theoretical and practical implication related to current research given as,

THEORETICAL IMPLICATIONS

The current research combined two fields of artificial intelligence and brand management. The AI based functional and empathy chatbots positively influenced brand awareness and brand image. It creates new knowledge through fusion of AI and brand equity theories grounded in social exchange theory. The current research helped in generalization of social exchange theory as brand provide solution to the queries of customers through chatbots conversation, while, customers purchase the products/services of that brand in exchange for the chatbot services. Moreover, the AI based branding model empirically tested and verified in current research.

PRACTICAL IMPLICATIONS

The AI based functional and empathy chatbots positively impact brand awareness and brand image. It provided some practical implications for managers and practitioners. The functional chatbot strongly predicted brand awareness, whereas, empathy chatbots found to be cause of brand image. So, the managers of organizations may incorporate these findings while branding of products or services by means of AI based chatbots. Similarly, brand managers may include these particular factors such as

Informativeness, responsiveness, reliability, problem-solving, conversational efficiency, service quality during development of functional AI based chatbot to improve their efficiency mechanisms. Similarly, managers may also consider factors such as perceived empathy, proactive identification of needs, responding to frustration, affective state empathy, and digital empathy during development of empathy AI based chatbots to improve their emotional context. The brand awareness and brand image build-up brand knowledge in customer mind. Practitioners may follow AI based branding model to implement in their brand building measures through the usage of chatbots.

LIMITATIONS AND FUTURE STUDIES

The current research emphasized upon the cross sectional data collection from students of two universities only. It generates the generalizability issue which may be addressed through collecting data from more participants from various other universities. The current research included only three local brands chatbots, whereas, future research may include more global brands from different manufacturing and services industries. Moreover, the future research may include other brand equity constructs in this research work to expand the scope of the study.

CONCLUSION

The current research objective was to find the influence of functional and empathy AI based chatbots on development of awareness and image in customer mind about a brand. The current research found that functional and empathy AI based chatbots positively impact brand awareness and brand image respectively. Moreover, the demographic profile revealed during the gender comparison that more male participated in the survey than female. The current research empirically tested and verified the factors forming functional chatbots such as informativeness, responsiveness, reliability, problem-solving, conversational efficiency, service quality and factors forming empathy chatbots such as perceived empathy, proactive identification of needs, responding to frustration, affective state empathy, and digital empathy. Finally, it may be concluded that AI based chatbots influence brand knowledge, ultimately brought about a new model of AI

based branding.

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