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Mediating Role of Customer Relationship Management between Buying Behavior and Critical Risk Factors via Digital Buying

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Abstract

Purpose: To examine the mediating effect of Customer Relationship Management (CRM) amid Digital Buying Behaviour (DBB) and Risk Factors (RF). **Methods:** The structured questionnaire was adopted to analyse critical factors of DBB, RF and CRM. The instrument was designed and validated with the help of exploratory factor analysis and confirmed the items by confirmatory factor analysis. The model fitness is verified. The reliability of the scale was tested along with CR. The field testing is done to remove ambiguity. The nativity changes were incorporated to align the current study. The responses were collected using convenience sampling method through the e-mail survey and 410 valid responses (digital consumers) considered. The data were collected during August – November 2022. Quantitative approach is used to examine both directions of the considered variables. First, the direct effect of DBB on RF is examined. Secondly, the direct effect of CRM is studied. Further, mediating effect of CRM in relationship amid DBB and RF is established. **Findings:** The DBB is significant and directly connected with RF (β = 0.952, p < .001), CRM is significant and positively allied with RF (β = 0.471, p < .001). DBB is significant and positively related to CRM (β = 0.779, p < 0.001), after removal of mediating variable (CRM), β weight of DBB is reduced from 0.952 to 0.703. Sobel test is steered to confirm the significance of the mediation effect of CRM, test statistic (z= 3.09, p <.001). Thus, CRM act as a partial mediator amid DBB and RF. **Novelty:** The present study integrates DBB, RF and CRM features associated in digital buying in solitary manner unlike sliced approach. The study of CRM role especially in digital buying is a uniqueness of the present research. Further, studying the partial mediating effect of CRM amid DBB and RF itself is a new attempt.

1 Introduction

The seamlessly integrated digital marketing through mouse-click ensures the customers' needs with the door-step delivery. The COVID-19 pandemic experiences entrust the need for digital buying. It is essential to understand digital user and platform experiences to know buyer trust and emotional rapport of digital customer[1]. The concerns such as social media practice, hedonic shopping, utilitarian behaviour, security factor, service and assurance features, digital ordering system, ease of use and psychological factors have a direct influence towards e-shopping. The risk factors considered by the customer positively affects consumer intent for digital buying. The perceived risk associated with digital buying may be grouped into; social, psychological, performance, financial-time risk. The social penetration theory describes information exchange functions in development of interpersonal relationships. As a result of social penetration, CRM is a business approach that understands and impacts customer behaviour. The CRM is an effective interaction tool that enables customer attraction-retention-loyalty and in turn profitability of the business organization[2]. The sustainable customer relationship management is order of the day along with strategy, business systems, processes and information technology[3].

The Positive CRM upsurge customer satisfaction and retention rate as well as employee satisfaction, consequently business performance. There is a requirement for understanding the speed of decision making by digital buyers[4]. The challenges of the digital market may be summarized as; late deliveries, damaged stock, theft, high fuel costs, expired stock and supply chain risks[5]. One of the core challenges in digital marketing is that the business conditions continuously change, which impacts the reception of campaigns[6]. Possession of digital skills, complexity of the logistics system and core processes, lack of industry-specific transformation guidelines, inadequate legislation for digitization are the challenges of digital buying[7]. The researcher should provide attention to study new purchase patterns to support retailers and digital marketers to develop business strategies[8]. The mastering data mining moves the focus on business outcomes with an emphasis on CRM. However, not much research has been conducted on the relationship between digital marketing, risk factors with the medication of CRM[9]. The literature remains silent to explore relationship between perceived risk factors associated with digital buying although there is rapid upsurge in digital shopping[10]. Present investigation uses a quantitative approach to examine the mediating effect of CRM amid DBB and RF.

2 Methodology

The structured questionnaire consists of four sections, the first section on the demographic information, second section on Digital Buying Behaviour (DBB), third section on Risk Factors (RF) associated with digital buying and fourth section on Customer Relationship Management (CRM). The designed instrument (Likert Scale) was validated with the help of an exploratory factor analysis and confirmed the items by confirmatory factor analysis and the model fitness is verified by measuring fit indexes using AMOS[11]. The digital buying behaviour is studied by adopting the 19-item scale with 6 factors (scale reliability ranges from 0.817 to 0.864). Risk Factors (RF) associated with digital buying is measured by adopting 15 item measuring scale with 5 factors (reliability ranges from 0.812 to 0.845)[12]. To examine the role of Customer Relationship Management in digital buying perceived,13 item scale with 5 factors

(reliability ranges from 0.832 to 0.847) was adopted. The CR of the scale adopted were 0.804, 0.814 and 0.829 respectively, which are acceptable [13]. The responses were collected using convenience sampling method through the e-mail survey and 410 valid responses (digital consumers) considered. The data were collected during August – November 2022. The nativity changes were incorporated to align the current study. The preliminary instrument field testing is done with 75 respondents and corrections were made to remove ambiguity. The choice of sample unit has been made after deep consideration, as this sector characterises growth by leaps and bounds. Convenience sampling technique was adopted to choose the respondents. Present investigation uses a quantitative approach to examine both directions of the considered variables. First, the direct effect of DBB on RF is examined. Secondly, the direct effect of CRM is studied. Further, mediating effect of CRM amid DBB and RF is established.

3 Results and Discussion

Data Analysis is carried out in three stages viz., scale validation is done for DBB, RF and CRM. Further, mediating role of CRM in association amid DBB and RF is established. Accordingly, the results are discussed in the section below.

3.1 Digital Buying Behaviour (DBB)

The Kaiser-Meyer-Olkin (KMO) test value is 0.784, which is more than 0.6 [8] indicating adequacy. The exploratory factor analysis is adopted using Principal Component Analysis (Varimaxrotation method) which explains 68.74% of total variance. Confirmatory Factor Analysis was performed to validate the extracted 5 factors along with 26 items using AMOS software. Based on the Eigenvalue (unity) 6 factors were confirmed along with the 19 items (Figure 1). They were grouped and labelled based on the relevance of items such as: Social Media Practice, Hedonic Shopping, Utilitarian Behaviour, security factor, Service factor and Assurance features. The confirmed model fit indices were noted as CMIN/DF ratio = 2.129, GFI = 0.892, AGFI = 0.897, PGFI=0.796, IFI=0.914, NFI.,=0.921, TLI.,=0.932 and RMSEA.,= 0.056. Fit indices nearer to unity signifies good measurement model [8]. As study results are indicative of close to unity, the proposed measurement model is adequate and adept to measure the Digital Buying Behaviour (DBB).
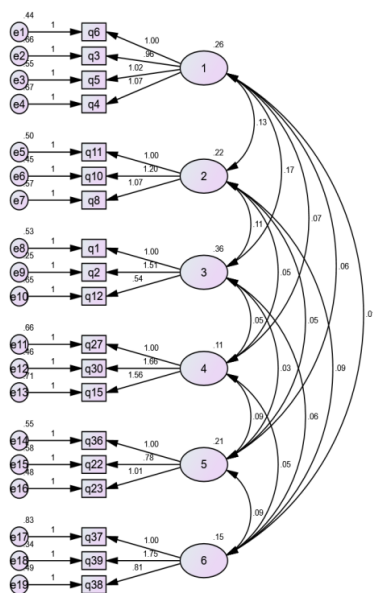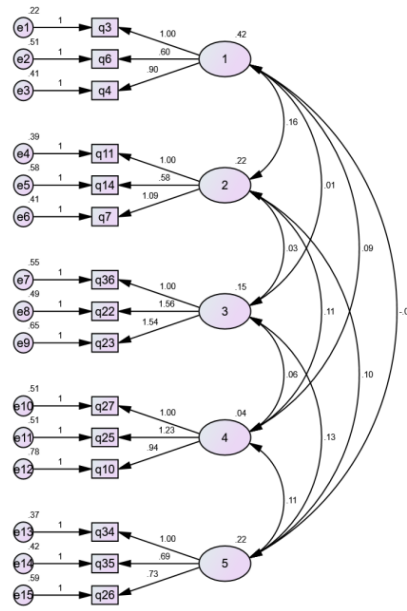

Fig 1. CFA- Digital Buying Behaviour (DBB)

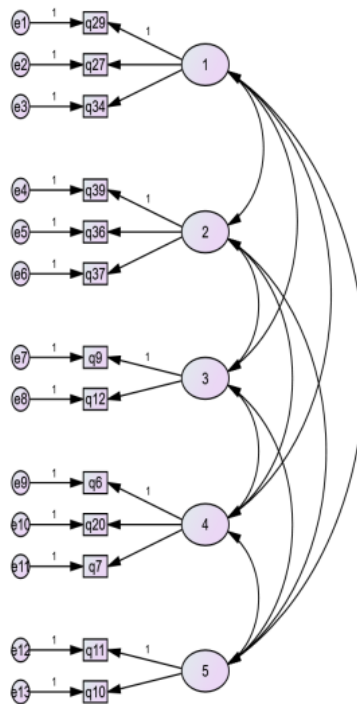**Fig 2.** CFA- Risk Factors (RF) associated with digitalbuying

Fig 3. CFA- CRM Factorsassociated with digital buying

3.2 Risk Factors (RF) associated with digital buying

The Kaiser-Meyer-Olkin (KMO) test value is 0.827, which is more than 0.6 [8] indicating adequacy. The exploratory factor analysis is adopted which explains 67.64% of total variance. Confirmatory Factor Analysis was performed to validate the extracted 6 factors along with 23 items using AMOS software. Based on the Eigenvalue (unity), 5 factors were confirmed along with the 15 items (Figure 2) which were grouped and labelled based on the relevance of items such as; Contractual Risk, Financial Risk, Psychological Risk ,Perceived Quality and Social Risk. The confirmed model fit indices were noted as CMIN/DF ratio = 2.129, GFI = 0.892, AGFI = 0.897, PGFI=0.796, IFI=0.914, NFI.,=0.921, TLI.,=0.932 and RMSEA.,= 0.068. Fit indices nearer to unity signifies good measurement model [8]. As study results are indicative of close to unity, the proposed measurement model is adequate and adept to measure the Risk Factors (RF) associated with digital buying.

3.3 CRM Factors

The Kaiser-Meyer-Olkin (KMO) test value is 0.817, which is more than 0.6 [8] indicating adequacy. The exploratory factor analysis is adopted which explains 69.64% of total variance. Confirmatory Factor Analysis was performed to validate the extracted 6 factors along with 24 items using AMOS software. Based on the Eigenvalue (unity), 5 factors were confirmed along with the 13 items (Figure 3) which were grouped and labelled based on the relevance of items such as; Change management, Management support, Organizational structure and Information technology support. The confirmed model fit indices were noted as CMIN/DF ratio = 2.746, GFI = 0.792, AGFI = 0.896, PGFI=0.806, IFI=0.901, NFI=0.912, TLI=0.901 and RMSEA= 0.063. Fit indices nearer to unity signifies good measurement model [8]. As study results are indicative of close to unity, the proposed measurement model is adequate and adept to measure the proposed CRM Factors associated with digital buying.

3.4 Mediation analysis

The present study was proposed to test the hypothesis; Digital Buying Behaviour (DBB) has a positive impact on Risk Factors of Digital Buying (RF) (H_1), Customer Relationship Management (CRM) has a positive impact on Risk Factors (RF)(H_2), Digital Buying Behaviour (DBB)has a positive impact on Customer Relationship Management (CRM) (H_3) and DBB has a direct mediating effect through Customer Relationship Management (CRM) on Risk Factors (RF), (H_4). The DBB is significant and positively associated with Risk Factors of Digital Buying (RF) ($\beta = 0.952$, p < 0.001), CRM is directly associated with RF ($\beta = 0.471$, p < .001) and DBB is noteworthy and directly related to CRM ($\beta = .779$, p<.001).
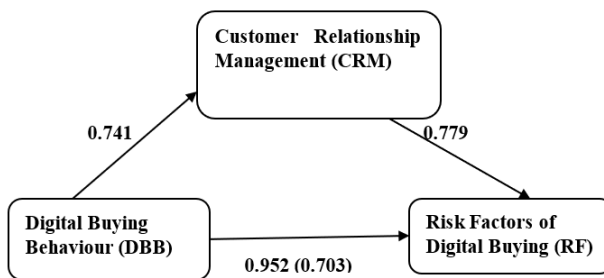

Fig 4. Mediating Role of CRM amid DBB and RF associated with Digital Buying

The multiple regression analysis indicates that; the first 3 steps of the mediation investigation were satisfied-reinforced. It also explored that after removal of mediating variables (CRM), β weight of the DBB is reduced from 0.952 to 0.703. Hence, CRM act as a partial mediator in relationship amid DBB and RF. In addition, Sobel test is steered to confirm the significance of the mediation effect of CRM, test statistic (z= 3.09, p <.001) reveals that there exist no proof to reject the pre-stated null hypothesis. Thus, CRM will mediate the relationship between DBB and RF. The DBB is significant and directly connected with RF ($\beta = 0.952$, p < .001), CRM is significant and positively allied with RF ($\beta = 0.471$, p < .001). DBB is significant and positively related to CRM ($\beta = 0.779$, p < 0.001). Thus, results may be summarized as; The RF has a positive impact on DBB(H_1), CRM has a positive impact on DBB significantly (H_2), DBB has a positive impact on CRM significantly(H_3) and DBB has a direct mediating effect through CRM on RF(H_4).The results of the multiple regression analysis explored that the first 3 steps of the mediation investigation were satisfied and reinforced, it also explored that after removal of mediating variables (CRM), the β weight of the DBB is reduced from 0.952 to 0.703 which is significant. Hence, CRM act as a partial mediator in relationship amid DBB and RF.

Table 1. Mediating Analysis Results: Role of CRM amid DBB and RF

Mediation Steps	Unstandardized β	SE	Standardized β	t	Significance Level
Step A	0.890	0.070	0.952	10.992	0.000
Step B	0.886	0.098	0.741	7.036	0.000
Step C	0.708	0.062	0.779	7.003	0.000
Step D	0.802	0.075	0.702	08.99	0.000
Sobel Test Findings					
Type of Mediation	Z	Effects			Level of Significance
	Score	Direct	Indirect	Total	
Partial	3.09	0.603	0.250	0.852	0.000

* Controlled variable (DBB), predicted variable (RF), Mediating variable (CRM)

The CRM act as a partial mediator amid DBB and RF similar to the findings of [14] which indicates a full mediating role. Thus, in a strategic context, digital shopkeepers need to design and implement the effective CRM process to align the DBB considering RF. CRM has a positive impact on RF significantly, which is in line with [14]. The Digital Marketing and CRM have a significant relationship. Further, it may be noted that online trust does not affect consumer purchase intention. The study results show that CRM mediates the relationship of digital marketing in Indonesian digital consumers. The present research findings are in line with [15]. The outcome of the present study contributes to e-commerce domain and companies to improve their effective CRM system to enhance the profitability. The variables such as social, hedonic, and utilitarian motivations were studied to evaluate factors associated with Digital Media Marketing (DMM) [16] while same variables were considered in existing research to study the DBB. The current study also emphasizes on effective CRM system which can bring competitive advantage to business which has been acknowledged [16]. The mediating role of CRM in the relationship between trust and system effectiveness has been highlighted by [17] which is also in line with present study. In contrast with the outcome of [18], which show that product pricing and packaging have a significant relationship with the buyer's decision process, however, current study results indicate that DBB has a positive impact on Risk Factors associated with digital buying. The effectiveness of the CRM system was examined by [19] involving those with online shopping experience, specifically the regular customers of Carrefour in Jordan. The results show that the relationship between training and effectiveness of CRM on online shopping was not mediated by user satisfaction, while present study in Indian Context indicates the mediating role of CRM amid DBB and RF. The information technology support and knowledge sharing mediate the relationship between marketing strategies and CRM in the pharmaceutical sector of Punjab, Pakistan [20]. The present study also emphasizes on the mediating role of CRM. The present paper integrates the DBB, RF and CRM in a solidary manner to study the role of CRM which is a novel consideration for the present research focusing solely on digital marketing.

4 Conclusion

As CRM the β weight of the DBB is reduced from 0.952 to 0.703 which is also significant. Hence, CRM act as a partial mediator in relationship amid DBB and RF. Sobel test confirm the significance of the mediation effect of CRM (z= 3.09, p <.001). The DBB is significant and directly connected with RF (β = 0.952, p < .001), CRM is significant and positively allied with RF (β = 0.471, p < .001). DBB is significant and positively related to CRM (β = 0.779, p < 0.001). Thus, The RF has a positive impact on DBB(H_1), CRM has a positive impact on DBB significantly (H_2), DBB has a positive impact on CRM significantly(H_3) and DBB has a direct mediating effect through CRM on RF(H_4). A strong CRM system must deliver to potential digital buyers the value proposition of product and services buying process and management. DBB has a positive impact on CRM significantly (H3) and DBB has a direct mediating effect through CRM on RF, this indicates that a combination of high levels of examination and implementation of CRM is positively related to digital buying behaviour. The present study findings indicate that DBB process should embrace effective CRM driven by digital storekeepers.

Thus, it is decisive to hold effective CRM system in order to stimulate DBB towards buying intention. The study has important theoretical and managerial implications for further research in DBB, RF and CRM. Digital marketing professionals need to work out right permutation and combination of these three factors to achieve right mix of marketing. The present study findings indicate that DBB process should embrace RF which is driven by CRM. Finally, Digital marketing professionals may consider these variabilities to design Integrated Digital marketing Management Process. This study has certain limitations which may be explored by future researchers. First, data were obtained from Digital Buyers of Bangalore city, India which may also affect the accuracy of the universal judgment at the national level. Second, current study adopted purely quantitative approach. Therefore,

considering these limitations into account, we call future researchers to explore on Qualitative Research in the marketing mix directions.

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