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Examining the Relationship between Social Media Analytics Practices and Business Performance in the Indian Retail and IT Industries: The Mediation Role of Customer Engagement

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ABSTRACT

Social media analytics (SMA) is a dynamic field which has received considerable attention from both academics and management practitioners alike. A significant number of the scholarly research currently being conducted in SMA, however, is conceptual. Industry experts know that SMA creates new opportunities for organisations who want to more strongly engage with their customers and improve business performance. However, the relationship between social media analytic practices (SMAP), customer engagement (CE), and business performance (BP) has not yet been sufficiently investigated from an empirical perspective. In order to gain a better understanding of the relationship between SMAP and BP and the mediation role of CE in that process, a large-scale survey was conducted among senior and mid-level managers as well as consultants in the Retail and information technology (IT) industries in India. Specifically, a structured closed-ended questionnaire was administered to managers and management consultants country-wide and gathered usable responses from 281 respondents holding positions such as: Digital Marketing Executive/Digital Marketing Specialist, Management Consultant, Analytics Manager, Customer Relationship Manager, Marketing Director, Engagement Manager, etc. who were in charge of digital marketing strategies in the respondent retail and IT organisations. The questionnaire addressed issues related to the way in which SMAP contribute to an enhanced business performance through the mediation role of customer engagement. Structural Equation Modelling was employed to analyse the received empirical data. On the basis of the findings our research concludes that there is a significant positive relationship between SMAP and BP mediated by CE in the Indian retail and IT industries.

1. Introduction

Social media, a powerful 21st century communication medium, has changed the dynamics of the business environment and redefined the way organisations communicate and engage with each other and their stakeholders. It has also, at the same time, provided the opportunity for customers to share their experiences about a product or brand. As a result, it is vital for businesses to be aware of the perception customers have of their products and/or brand identity (Anjanita, 2017). Data derived from Statista (2019) suggest that Facebook is one of the world's most popular social networking sites with nearly 2.2 billon active users. From the consumers' perspective, social media and social networks have become an essential part of their daily lives (Shiau, Dwivedi, & Yang, 2017; Shiau, Dwivedi, & Lai, 2018) and this, in turn, has changed the way in which individual consumers acquire information and communicate with each other (Dwivedi, Kapoor, & Chen, 2015). Presently, Instagram is the most popular photo and video-sharing platform and enjoys one billion monthly active accounts (Clement, 2019. For its part, with 330 million monthly active users Twitter generates 6000 tweets per second Internet lives today, 2018; Statista, 2019). From social media data, retail and IT organisations have demonstrated a keen interest in analysing, measuring, and predicting business/customer insights in order to make sound business decisions (Rafiq, 2017; Sivarajah, Kamal, Irani, & Weerakkody, 2017). According to Sivarajah, Irani, Gupta, and Mahroof (2019), SMA has the potential to help businesses understand the effectiveness of organisational

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communication and customer interaction on different social media platforms. SMA has been referred to as an approach to gathering data from social media networking sites and blogs then analysing it according to online activities of customers, user-generated data, customer sentiments and customer behaviour in real time to enable more efficient and effective business decisions to be made (Bekmamedova & Shanks, 2014).

SMA is currently helping retailers to collect and analyse information in a way that enables them better understand customer behaviour, enhance customer life cycle, engage new markets, improve responsiveness, and inspire loyalty. Kapoor et al. (2018) carried out a review of social media and social networking studies from 1997 to 2017. Their study identifies the major advances made in social media research during the period and highlights their significance. A similar study by Stieglitz, Mirbabaie, Ross, and Neuberger (2018) outlines the key challenges and steps in the SMA process and their mitigating strategies. A number of success stories were reported from consultancies and commercial research companies in the form of "white papers" which highlight the use of SMA in enhancing customer engagement and business performance (Cognizant, 2014; SAS, 2011; The Enterprise Strategy Group, 2013). Customer engagement relates primarily to the nature and intensity of a relationship a customer has with the supplier of a product or service; while business performance refers primarily to the extent to which such relationship contributes to the organisation's success and prosperity.

India is today a very fast growing economy with a rapidly expanding retail and IT industries. Retailers such as Reliance Retail, RPG Retail, Future Group, Aditya Birla Group, ITC Ltd, Tata Group, Vishal Group, and BPCL, and many multinational companies such as Wal-Mart, Tesco, and Metro have established in India and are rapidly strengthening their market positions. According to India Brand Equity Foundation (IBEF), the Indian retail market is expected to increase by 60 % to reach US$ 1.1 trillion by 2020; and the online retail market is expected to grow from US$ 17.8 billion in 2017 to US$73 billion by 2022 (IBEF, 2018). According to Ernst & Young (EY) and Retailers Association of India (RAI), "Organised retail penetration, currently estimated at 75%, is expected to reach –20 19–20% p.a. growth… by 2018″ (EY and RAI, 2013). Research shows that there is a lack of studies that have explored the application of social media analytics on the Indian retail sector particularly exploring the relationship between SMA practices, customer engagement and business performance. This study therefore attempts to fill this gap in research gap.

The objective of this research, therefore, is to empirically investigate and produce knowledge about the nature of the relationship that exists between customer engagement and business performance. We use SMAP as the tool for our investigation. Four research questions have been identified in our research as follows:

(1) Does strategic use of SMAP have a positive relationship with customer engagement?
(2) Does customer engagement have a positive relationship with business performance?
(3) Does strategic use of SMAP have a positive relationship with business performance?
(4) Does customer engagement have a mediating effect on the relationship between SMAP and Business performance?

In order to address these questions, we first developed a conceptual model to analyze the relationship of SMA practices (SMAP), customer engagement and business performance and then tested the model empirically through Structural Equation Modelling (SEM) using a sample of 281 responses.

The remainder of this paper is organised as follows: Sections 2 and 3 are concerned with a review of the literature, research framework and hypothesis development. In Section 4 we present and clarify the research methods. Section 5 presents and discusses the results of the empirical data analysis. Section 6 represents the discussion and implications of our research; while Section 7 presents its main conclusions and outlines avenues for future research.

2. Literature review

2.1. Social media analytics practices (SMAP)

According to Zeng, Chen, Lusch, and Li (2010), SMA "is concerned with developing and evaluating informatics tools and frameworks to collect, monitor, analyze, summarize, and visualize social media data in order to facilitate conversations and interactions…to extract useful patterns and intelligence…". SMA has evolved to become an important driver for acquiring and spreading information in different domains (Stieglitz et al., 2018). SMA monitors and analyses data gathered from blogs, forums, Facebook, Twitter, YouTube, etc. all of which contain very significant and valuable information about consumer perceptions, competitors, products, brands and services necessary in making business decisions (Anjanita, 2017; Sivarajah et al., 2019). SMA has the potential to provide real-time feedback and actionable insights to help organisations in their decision-making processes (Umar, 2014). SMA has also been defined as a collection of tools, systems, and/or frameworks that facilitate the above types of activity (Grubmüller, Götsch, & Krieger, 2013 and Grubmüller, Krieger, & Götsch, 2013). Yang, Kiang, Ku, Chiu, and Li (2011) states that SMA is concerned with developing and evaluating informatics tools and frameworks to measure the activities within social media networks from around the web. Kurniawati, Shanks, and Bekmamedova (2013) note the following benefits based on a review of 40 SMA "success stories" from companies such as IBM, SAS, and SAP: 1) Improved marketing strategies (75% of the cases), 2) Better customer engagement (65%), 3) Better customer service (35%), 4) Better reputation management and brand awareness (30%), 5) Product innovation (30%), 6) Business process improvement (25%) and 7) Discerning new business opportunities (20%).

Moreover, Bekmamedova and Shanks (2014) note that successful use of social media analytics practices depends on three key organisational practices: 1) Customer management 2) Performance management and 3) Process management. Knowing your customer is one of the most fundamental rules of the retail business and SMA provides retailers with a wealth of information about their customers (Anjanita, 2017; Sivarajah et al., 2019). Retailers can better understand customer behaviour by combining intelligence acquired by social media platforms with traditional customer intelligence (Sigala & Chalkiti, 2015). Customer management can be seen primarily in terms of an organisation's capability to understand its customer expectations and market intelligence (Ray, Muhanna, & Barney, 2005).

To gain competitive advantage retailers need to monitor and analyse customer-generated content on various social media sites (Lee, 2018). This is important in a SMA context as it enables organisations to improve their customer and market intelligence. Mithas, Ramasubbu, and Sambamurthy (2011) define performance management as "… an organization's capability to design and manage effective performance measurement and monitoring systems to support the communication and decision of performance to appropriate stakeholders". If SMA insight is exercised effectively, the organisation will be able to measure its business impact and execute relevant competitive actions (Bekmamedova & Shanks, 2014). Mithas et al. (2011) further define process management as "…an organization's capability to achieve speed, flexibility and frugality through an effective design and managing the key processes". In the SMA context process management practices ensure that SMA and insights are integrated with the appropriate business processes and relevant metrics to develop and control it (Bekmamedova & Shanks, 2014). SMA has the potential to help businesses understand their audience using social data. SMA tools are also helpful in surfing most social media channels and social networks (Quantzig, 2019).

Customer engagement is extremely important to business performance because without the nature of close dyadic buyer-seller relationship the organisation will not be in a position to gauge the success or otherwise of its business model. By engaging with its customers on a close, continuous, and interactive manner the organisation will not only acquires "real time" information about what is happening in the marketplace, it enables it to have the appropriate data that it then uses as input to its overall strategic development process. There appear therefore to be a clear and significant relationship between customer engagement and business performance. SMA is a powerful tool that enables the organisation to have a better understanding of the significance of the relationship between customer engagement and its own performance in the marketplace.

2.2. Customer engagement (CE)

CE enables organisations to interact, participate and influence the conversation around their brand. Additionally, effective CE strengthens brand loyalty and influences the discussion and purchase behaviour of the customer (Carr, 2017). Users who have a high appreciation of big brands engage with these brands through "liking", "sharing" and commenting on them on social media (Araujo & Neijens, 2012; Lin & Lu, 2011; Ruiz-Mafe, Martí-Parreño, & Sanz-Blas, 2014). CE is built and rebuilt with every brand interaction, whether it relates to making a purchase, reading a social media post or any exposure to the brand (Jacob & Bindal, 2018). Cambra-Fierro, Melero-Polo, and Vázquez-Carrasco (2013) define CE as a set of "customer behaviors vis-à-vis the firm – both transactional (loyalty, repurchase intention) and non-transactional (commitment, word-of-mouth, referrals, blogging, etc.) in nature – which guarantee future sales volumes, generate positive publicity and bolster brand reputation". Understanding the nature of customer/brand relationship has become much more complex with the introduction of social and video sharing platforms such as Facebook, Twitter, blogs, YouTube and Vimeo (Brodie, Ilic, Juric, & Hollebeek, 2013; Hollebeek, Glynn, & Brodie, 2014). Hollebeek (2011b) defines 'customer brand engagement' as "…the level of a customer's motivational, brand-related and context-dependent state of mind characterised by specific levels of cognitive, emotional and behavioural activity in brand interactions…" (Hollebeek, 2011a: 24). CE is mainly focused on interaction and participation of customers (Nambisan, 2002; Wagner & Majchrzak, 2006). Mollen and Wilson (2010) define customer brand engagement as: "a cognitive and affective commitment to an active relationship with the brand as personified by the website or other computer-mediated entities design to communicate brand value". Brian Haven of Forrester Research Forrester (2008) has articulated the definition for engagement as the level of involvement, interaction, intimacy and influence one individual has with a brand over time. "Engagement goes beyond reach and frequency to measure people's real feelings" (Forrester, 2008). Involvement – i.e. the primary point and reflects pragmatic involvement between a person and level of interest in a brand. Thomson, MacInnis, and Park, 2005:271) define involvement as "a state of mental readiness that typically influences the allocation of cognitive resources for a consumption object, object, or decision". Involvement can be defined as "perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky, 1985:342). De Valck, Van Bruggen, and Wierenga (2009) emphasise the Internet's capability to act as a medium that enables customers to access online content to communicate with companies. When discussing the introduction of online communities, the concepts of participation and interaction are the most-used ones. The significant contribution people make through comments on company blogs, requests for product information, social media nexus and discussions in forums are different interaction activities. Dholakia, Bagozzi, and Pearo (2004) suggest that 'participation' in an on-line community should be seen as a product of the frequency and duration of community visits and that this is moreover similar to the definition of interaction proposed by Hollebeek (2011a) and Kuo and Feng (2013). CE is extremely important to business performance because without the nature of close dyadic buyer-seller relationship the organisation will not be in a position to gauge the success or otherwise of its business model. By engaging with its customers on a close, continuous, and interactive manner the organisation will not only acquires "real time" information about what is happening in the marketplace, it enables it to have the appropriate data that it then uses as input to its overall strategic development process.

2.3. Business performance (BP)

Many definitions of what constitutes a BP can be discerned from the literature (see, for example, Alchian & Demsetz, 1972; Flapper, Fortuin, & Stoop, 1996; Daft, 2000; Al-Marri, Moneim, Baheeg Ahmed, & Zairi, 2007; Jing & Avery, 2008). However, in its crystallised form BP has come to be regarded primarily in terms of how the organisation is meeting its objectives seen from the perspective of how it creates value and disseminates that value to its own customers in an optimal manner. A number of studies have attempted to measure BP using financial returns (return on investment, for example) or market-related criteria such as increase in market share, overall competitive position of the organisation in the marketplace, and so on (Flynn, Huo, & Zhao, 2010). The definition which we have retained and utilised in the present research is that which relates to value creation, enhancement, and dissemination to customers which, in turn, leads to BP through CE.

3. Research framework and hypotheses development

The conceptual framework for this study is primarily derived from the analysis of many success stories published by SMA vendors and academic resources (Cognizant, 2014; IBM, 2013; SAP, 2014; SAS, 2011; Traphagen, 2015; York, 2017). Moreover, from our own discussions with industry experts and academics we postulate that a possible strong relationship exists between SMAP, CE and BP. For this purpose, SMAP are expected to have a positive and direct relationship with CE. It is also assumed that there is a positive relationship between SMAP and BP mediated by CE. Moreover, it is believed that SMAP may also have a direct and positive relationship with BP.

As part of the preliminary study and to understand the nature, dimensions, scope and items of SMAP, CE and BP, we identified experts from the retail and IT Industries as well as academia that were closely associated with social media and CE-related initiatives in the retail and IT industries across India. We invited a focused group of 10 persons comprising four business executives, two customer relationship management (CRM) experts, two analytics professionals and two marketing professors. These experts had a vast amount of information and knowledge on the benefits of implementing SMAP in the retail and IT industries. Based on extensive review of the literature, coupled with analysis of online comments and combining the initial recommendation of field and focus group interviews, we defined the dimensions and list of items which are considered relevant for inclusion in the data collection instrument (closed-ended structured questionnaire) in order to measure SMAP, CE and BP (for details please refer to the Appendix of the paper).

SMAP is conceptualised as a three dimensional construct which are: customer management, process management, and performance management. CE is conceptualised as a four dimensional construct which are: involvement, interaction, intimacy, and influence; and BP is conceptualised as a two dimensional construct – i.e. financial performance and market performance. Subsequently, the dimensions and items of SMAP, CE and BP were verified using confirmatory factor analysis and validated on different data sets during our pilot study phase. According to Churchill (1979), it is very important to identify theoretical relationships between any newly proposed construct and other conceptually related, but distinct concepts. In the following section, we find constructs related to SMAP that lead to the formulation of the

study's hypotheses.

The traditional way of measuring and managing CE has been to conduct customer surveys. This metrics is complex and takes a long time to achieve. With Social Data Analytics retailers can analyse how engaged customers are and how efficient customer relationship management (CRM) is by counting how many of their customers "like" their publications, "share" them, comment on them or speak about a brand. Retailers get a better understanding of both their existing and prospective customers and embrace a new way of engaging with them (Anjanita, 2017). The impact of social media extends across all industries and is particularly prevalent in the retail industry where it has completely changed the brand-customer relationship into customer-centric interaction. Developments in SMA suggest that it is important for retailers to hold discussions with their customers, improve their facilities, radar in on content, and bankroll on engagement insights. SMA is increasingly being used to generate deep customer insights based on buying patterns, demographics, web behaviour, social media, and product affinities. According to TCS (2014) this enables tracking of online mobile engagement and conversations on social media in order to improve customer retention and increase vista conversion. It also improves the accuracy of demand vaticinator, thus helping to better anticipate customer needs. The opportunities for delivering this type of engagement have never been greater. Customers have accumulated a wealth of information that businesses can analyse in order to create data-enriched insights into customer behaviour and need. The amount and context of data ultimately drive more personal nexus between the customer and business, enabling even deeper and more authentic engagements (SAP, 2014). However, there is currently no empirical evidence in the literature which sufficiently demonstrate that SMA will indeed improve CE.

Based on the preceding discussion we have developed the following hypotheses for our research:

H1. There is a positive relationship between social media analytics practices and customer engagement in the Indian retail industry.

CE recognises that organisational buying from consumers is important that they will influence BP (Carr, 2017). Employee engagement leads to CE and that CE, in turn, can lead to performance increases of up to 240% (Stephenson, 2014). A study conducted by People Metrics on 10,000 customers in 2008 (PeopleMetrics, 2008) reveal that organisations with highly engaged customers yielded 8 % return on investment (ROI) above the industry average; while organisations with less engaged customers experienced a decrease in their profit margins by as much as 23 % below the industry average. Highly engaged customers led their organisations to grow 13 % above the industry average and low engaged customers led to organisations declining profit margins by 36 % as against the industry average (Peoplemetrics, Inc, 2008). Moreover, it was concluded that retail organisations that engaged with their customers had better financial results than those who failed to engage with their customers (Peoplemetrics, Inc, 2010). Engagement takes many forms, including content consumption, website page views, email opens, paid and organic search clicks, call centre interactions, "likes" and "follows", tweets and re-tweets, and referrals (McLeester, 2014). CE is a one-dimensional concept and as such, focuses on either the emotional, the cognitive, or behavioural aspects of engagement. According to Brodie, Hollebeek, Jurić, and Ilić (2011) the behavioural dimension in particular appears dominant within the one-dimensional perspective. Engagement behaviourally summarises the impact of marketing/branding communications activities in the hearts and minds of consumers in a manner that leads to higher sales margins, market share, market value, and cash flow (ARF-Advertising Research Foundation, 2006). According to the Economist Intelligence Unit (2007), more CE translates into improved customer loyalty (80%), increased revenue (76%) and increased profits (75%). However, there is no empirical evidence available in the literature that sufficiently demonstrates that CE will improve BP. As a result:

H2. There is a positive relationship between customer engagement and business performance in the Indian retail and IT industries.

The use and importance of social media by businesses is expected to flourish in the coming years; and in particular the use of analytical capabilities to analyse and interpret vast amounts of online information to gain customer and business documents will assume a heightened importance (HBR, 2010; IBM, 2013). KIA motors and The Royal Bank of Canada have achieved product innovation, customer service improvement, and identification of new business opportunities through SMA (Kite, 2011). SMA is moreover about combining the social data and transforming it into meaningful information which can then be used in an organisation to enrich brand visibility and improve top line sales figures. According to Shiau et al. (2017), "……Contemporary firms should pay additional attention to social network users and effectively utilize social networks to enhance firm performance…." However, there is currently no empirical evidence available in the literature which demonstrates that SMA practices will improve BP. As a result:

H3. There is a positive relationship between social media analytics practices and business performance in the Indian retail and IT industries.

Considering Hypothesis H1–H3, the possibility also existed that customer engagement may serve as a mediating role between social media analytics practices and business performance.

A number of studies have examined how SMAP can generate more profit and sales revenue by engaging customers (Cognizant, 2014; IBM, 2013; Kamboj, Yadav, Rahman, & Goyal, 2016; Parveen, Jaafar, & Ainin, 2015; Setyani, Zhu, Hidayanto, Sandhyaduhita, & Hsiao, 2019; SAS, 2011; SAP, 2014; Traphagen, 2015; York, 2017) but considering this central role of CE we do not find empirical evidence in literature studies that sufficiently demonstrates that SMA will improve BP through CE. Accordingly, it was finally hypothesised that:

H4. Customer engagement has a mediating role on the relationship between social media analytics practices and business performance.

Fig. 1 presents the conceptual model used in the present research. The model proposes that SMAP have a positive relationship with BP both directly and indirectly through CE.

4. Research methods

4.1. Instrument development

Our questionnaire uses a scale to measure various constructs of the research model depicted in Fig. 1. Subsequent to literature review and expert opinion, an initial draft of a structured closed-ended questionnaire was developed which contained 33 items (questions). These were divided as follows: 15 items related to SMAP, 12 items for CE, and 6 items for BP. A five-point Likert scale was used to specify the

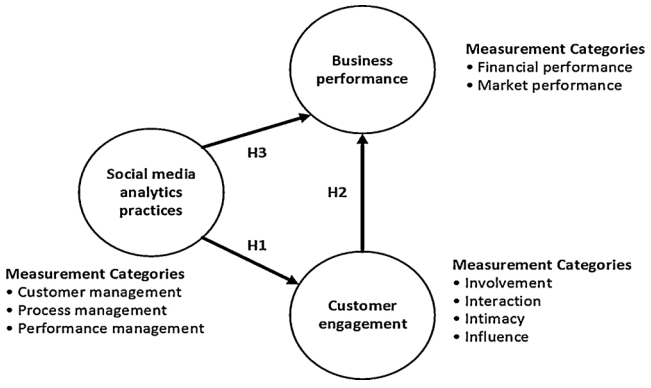


Fig. 1. A conceptual model of research and hypotheses development.

respondents' level of agreement to the statements. Items of SMAP were evaluated on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5); items of CE ranged from Never (1) to all the time (5); and items of BP ranged from significant decrease (1) to significant increase (5). Details of scale items are indicated in the Appendix to this paper. Furthermore, reliability and validity of the questionnaire using two pilot tests were carried out. Feedback was gathered after each pilot test and the questionnaire was refined in response to the feedback. During the first pilot test the 33 item questionnaire was sent to the 7 subject-matter experts in order to gauge their reaction on the wording and content of the items. In the second pilot test the questionnaire was sent to 65 Management consultants and Digital marketing executives. Data received from the questionnaire were statistically processed. Cronbach alpha and Confirmatory Factor Analysis (CFA) was conducted to check reliability, validity, and statistical fit as well as finalise the list of measures.

4.2. Data collection

Initially, 400 respondents were contacted by telephone to ascertain whether or not their organisation had implemented SMAP if so whether it would be interested in participating in our research, the right person within the organisation we could contact, etc. As per the response of the organisation, Digital Marketing Executives, Digital Marketing Specialist, Management consultants, Analytics Managers, CRM Managers, Marketing Director, engagement Managers who had responsibility for developing a digital marketing strategy for the retail organisation were contacted and asked to provide responses to the questionnaire. We used a mixed-mode survey procedure which was adapted from Dillman (1978); Dillman (2007). The questionnaire was sent to the target population through mail directly to the respondents, through personal phone interviews, or through Google platforms.

We received a total of 337 responses of which 56 were rejected (for various reasons) leaving a total of 281 usable responses which constitute the data for our empirical analysis.

4.3. Sample profile

Of the 281 respondents, 33.1% were females, while 66.9% were males. Around 52% respondents were between 27 and 35 years of age and 48% were between 35 and 50 years old. More than half of the respondents (54%) had MBA degree and 39% of them held B. Tech./B.E. qualifications. Of the total number of respondents 42% were Digital Marketing Executives/Digital Marketing Specialists, engagement Managers/Marketing Directors; 40% were Management consultants, Analytics Managers, CRM Managers; and the remainder occupied intermediate positions in the retail and IT industries. It was observed from the final sample that 95% of the respondents had knowledge of SMA. It can be concluded from the profile of the respondents that they were either involved in retail marketing strategy or implementation of SMA.

4.4. Item generation

In order to test the hypothesised relationship between the constructs we needed to generate item pool depicted in the theoretical model (Fig. 1) – i.e.: 1. SMA, 2. CE, 3. BP. The purpose of generating the items pool was to achieve content validity of the constructs by reviewing the literature and consulting with experts on the subject. This is consistent with the postulation of Churchill (1979) which suggests that measurement items for a scale should cover the content domain of a construct.

To generate the items for SMA we have reviewed previous related research (Bekmamedova & Shanks, 2014; Grubmüller, Götsch et al., 2013 and Grubmüller, Krieger et al., 2013; Kurniawati et al., 2013; Lee, 2018; Mithas et al., 2011; Sigala & Chalkiti, 2015; Yang et al., 2011; Zeng et al., 2010). The research is a rich pool of illustrations, definitions and items of SMAP. As indicated earlier a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) was used with regard to experts' perception of SMAP in the organisation. Experts were instructed to retain items based on clarity of words and relevance related to SMAP. Items that were not relevant and not clear were deleted from the items pool. All of the respondents were subject-matter experts in the domain of digital marketing. Items were created in 3 groups as per the corresponding three sub-dimension proposed in the theoretical model (Fig. 1).

To generate the items for customer engagement we have reviewed previous related research (Astute, 2019; Brodie et al., 2013; Haven of Forrester Research, 2008; Haven, 2007; Hollebeek et al., 2014; Hollebeek, 2011a, 2011b; Mollen & Wilson, 2010; Nambisan, 2002; Wagner & Majchrzak, 2006). A 5-point Likert scale ranging from Never (1) to all the time (5) was used in reference to experts' perception in order to track customer engagement in their organisation. Items were created in 4 groups as per corresponding four sub-dimension proposed in the theoretical model (Fig. 1).

To generate the items for business performance we have reviewed previous related research (Al-Marri et al., 2007; Combs, Russell Crook, & Shook, 2005; Flynn et al., 2010; Jing & Avery, 2008; March & Sutton, 1997; Venkatraman & Ramanujam, 1987). A 5-point Likert scale ranging from Never (1) to all the time (5) was used in reference to experts' perception in order to measure business performance in the organisation. Items were created in 2 groups as per corresponding two sub-dimension proposed in the theoretical model (Fig. 1).

5. Data analysis and results

We performed Structural Equation Modelling (SEM) using AMOS 18.0 to analyse the empirical data. SEM is a statistical method for analysing causal relationships in a set of constructs represented by multiple measurable variables/items in a single model. SEM helps in analysing theoretical relationship between different constructs. It comprises two components, namely: the measurement model and structural equation model (Blunch, 2008). The measurement model defines how latent variables are measured or operationalised using the observed variables; it provides the validity and reliability of measures used in representing the latent variable. The structural equation model on the other hand explains the assumed causation in the set dependent and independent constructs developed from the conceptual model (Gefen, Straub, & Boudreau, 2000; Hair, Black, Babin, & Anderson, 2010).

5.1. Assessment of the first-order measurement model

The conceptual model used in this study contains multidimensional constructs. First, we perform confirmatory factor analysis (CFA) for each construct to assess the validity and reliability of the first-order measurement model. Before hypothesis testing it is mandatory to test the first-order measurement model for validity and reliability (Fornell & Larcker, 1981). Fig. 2 shows a first order measurement model which focuses on the relationship between dimensions/sub-construct and items.

The factor loadings of latent to observed variables should be above 0.50 (Hair et al., 2010). Three items (i.e. PEM4 = 0.48, PEM7 = 0.35 and INF1 = 0.32) were deleted from the model because of low factor loading (< 0.50). After deleting the 3 items from first-order measurement model, all measures were analysed for reliability and validity. The reliability of these constructs was evaluated using Cronbach's coefficient alpha and the value should be above 0.7, indicating a reliable measurement instrument (Nunnally & Bernstein, 1994). To assess the construct validity Churchill (1979) suggests that the convergent and discriminant validities should be examined. Therefore, we measure convergent validity by composite reliability and average variance extracted measures. Composite reliability is a measure of the internal

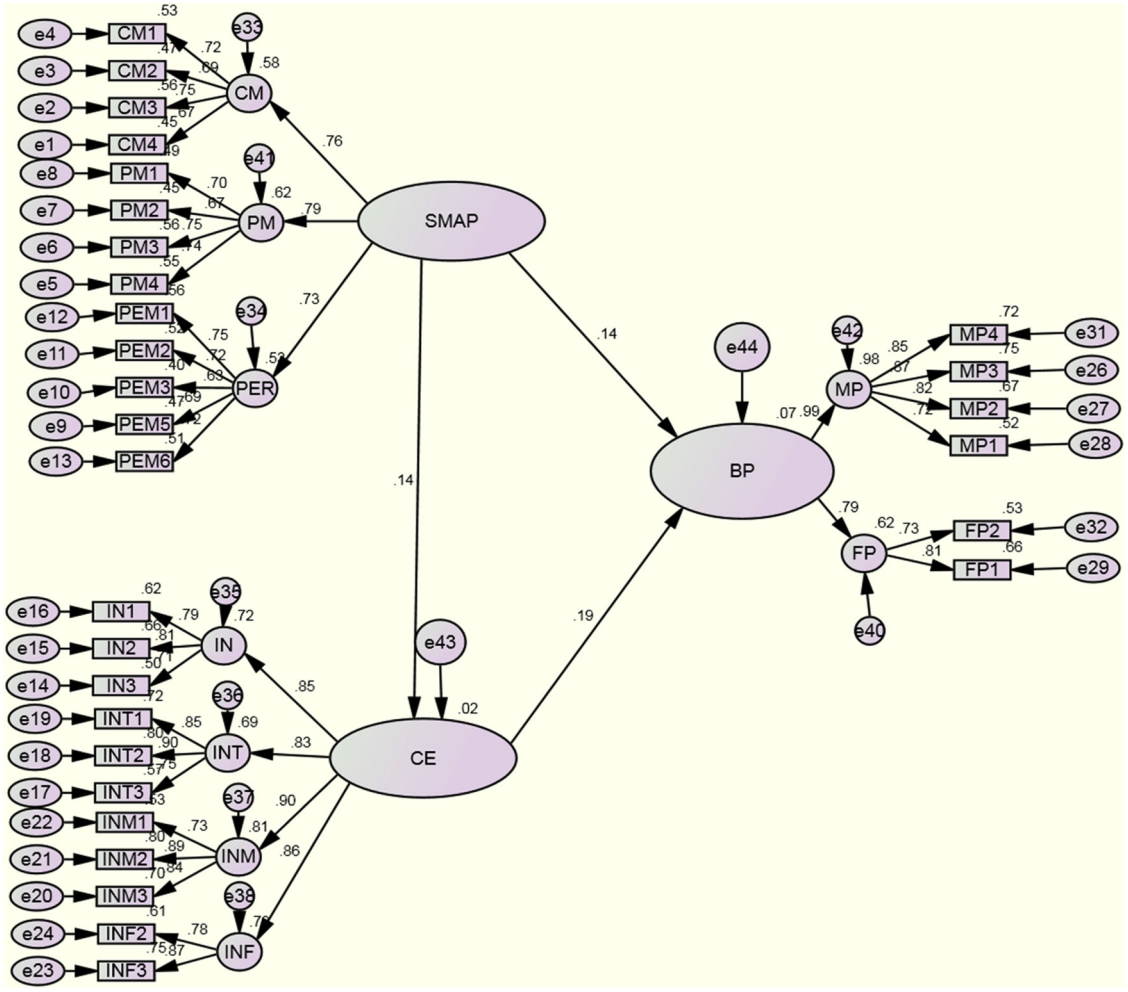


Fig. 2. Structural model.

consistency of the construct in a scale; while average variance extracted can be defined as the extent of the variance of variable which is explained by the latent constructs. Suggested value of CR should be greater than 0.7 (Hair et al., 2010) and AVE should be greater than 0.5 (Fornell & Larcker, 1981).

Results of Table 1 clearly demonstrate the adequate reliability and convergent and discriminant validity of all the sub-constructs.

Discriminant validity is the degree to which variables in different constructs are different from each other. It means that variables in different constructs have low correlation between themselves. According to Fornell and Larcker (1981) in order to establish discriminant validity, "the square root of a construct's AVE must be larger than the inter-construct correlations". Table 2 explains the results of discriminant validity. The element in diagonal represents the square root of the average variance extracted. All sub-constructs showed more variance with their indicators than with other sub-constructs. The square root of AVE exceeds the correlation between other constructs. These results imply satisfactory discriminant validity. After testing the measurement model with all the parameters mentioned above we can confirm that the model is reliable and valid.

5.2. Assessment of the second-order measurement model

SMAP, CE and BP was conceptualised as a second-order model composed of 3, 4 and 2 dimensions respectively.

Second-order models are potentially applicable when (a) the lower order factors are substantially correlated with each other, and (b) there is a higher order factor that is hypothesised to account for the relations among the lower order factors. The reliability and validity of the second-order model can be measured similar to first-order model.

The results in Table 3 confirm high reliability of the second-order measurement high validity in terms of convergent and discriminant validity. Therefore, we conclude that the second-order measurement model is internally consistent and reliable as suggested by Fornell and Larcker (1981).

Similar to the first-order measurement model, we tested the discriminant validity for the second-order model. Table 4 shows that all of the diagonal values exceed the squared inter-construct correlations. Therefore, we conclude that the first-order construct can be explained by the second-order construct.

In order to analyse the statistical fitness of the structural model, many fitness indices like the comparative Fit Index (CFI), the goodness-of-fit index (GFI), Normed fit index (NFI), Tucker-Lewis Index (TLI) and Root Mean Square of Error Approximation (RMSEA) are used. The ideal values indices of X2/df should be less than 3, CFI,GFI, NFI, and TLI should be more than 0.9 and the RMSEA value must be lower than 0.08 (Gefen et al., 2000). Table 5 represents a brief summary of goodness-of-fit indices of second-order measurement model. The respective value of X2/df, CFI, GFI, NFI, and TLI are 1.498, 0.944, 0.863, 0.851and 0.938. The value of RMSEA is 0.046. Although the GFI and NFI value of 0.876 and 0.860 could not meet the criteria, the values are the closet threshold thus representing an acceptable model fit.

Based on the preceding it can be concluded that the second-order measurement model represents a good fit and as such we can proceed to

Table 1
Reliability and Items loading.

Dimensions/Sub-construct	Items	Standard factor loading	Cronbach(α)	Composite reliability	Average variance extracted	Average shared variance
Customer management (CM)	CM1	0.725	0.800	0.801	0.505	0.095
	CM2	0.689				
	CM3	0.749				
	CM4	0.670				
Process management (PM)	PM1	0.703	0.806	0.809	0.515	0.099
	PM2	0.671				
	PM3	0.751				
	PM4	0.743				
Performance management (PEM)	PER1	0.739	0.825	.829	.493	0.093
	PER2	0.754				
	PER3	0.739				
	PER5	0.662				
	PER6	0.740				
Involvement (IN)	IN1	0.787	0.815	0.815	0.595	0.210
	IN2	0.814				
	IN3	0.708				
Interaction (INT)	INT1	0.849	0.870	0.873	0.697	0.216
	INT2	0.896				
	INT3	0.752				
Intimacy (INM)	INM1	0.729	0.870	0.862	0.677	0.228
	INM2	0.894				
	INM3	0.836				
Influence (INF)	INF2	0.778	0.805	0.807	0.676	0.212
	INF3	0.865				
Financial performance (FP)	FP1	0.792	0.743	0.744	0.594	0.092
	FP2	0.880				
Market performance (MP)	MP1	0.721	0.884	0.888	0.666	0.102
	MP2	0.819				
	MP3	0.867				
	MP4	0.850				

Table 2
Discriminant validity of the first-order measurement model.

	CM	PM	PER	IN	INT	INM	INF	FP	MP
CM	**0.709**								
PM	0.607	**0.718**							
PER	0.539	0.568	**0.702**						
IN	0.042	0.132	0.042	**0.771**					
INT	0.103	0.195	0.264	0.706	**0.835**				
INM	0.017	0.114	0.062	0.737	0.755	**0.823**			
INF	0.068	0.176	0.085	0.756	0.676	0.784	**0.822**		
FP	0.215	0.012	0.093	0.146	0.144	0.184	0.069	**0.770**	
MP	0.184	0.014	0.201	0.166	0.249	0.206	0.088	0.760	**0.816**

testing the structural model using SEM.

5.3. Assessment of the structural model

A structural model was developed using SEM to examine the hypothesised conceptual research model (Fig. 2). A brief summary of fitness indices for the structural model are shown in Table 6. The values of X2/DF, CFI, GFI, NFI, and TLI are 1.498, 0.944, 0.963, 0.851 and 0.938 respectively. The RMSEA shows a value of 0.046. As per fitness indices

Table 4
Discriminant validity of the second-order measurement model.

	CE	SMAP	BP
CE	**0.859**		
SMAP	0.163	**0.769**	
BP	0.213	0.069	**0.893**

Table 5
Summary of goodness-of-fit Indices for Measurement Model.

Model Fit Index	Chi-square/ Degree of freedom	CFI	GFI	NFI	TLI	RMSEA
Model	1.498	0.944	0.836	0.851	0.938	0.046

Table 6
Summary of Goodness-of-Fit Indices for Full Model.

Model Fit Index	Chi-square/ Degree of freedom	CFI	GFI	NFI	TLI	RMSEA
Model	1.498	0.944	0.863	0.851	0.938	0.046

Table 3
Reliability and items loading.

Construct	Sub-construct	Loading	Cronbach (α)	Composite reliability	Average variance extracted
Social media analytics practices (SMAP)	Customer management(CM)	0.760	0.871	0.804	0.591
	Process management (PM)	0.786			
	Performance management (PEM)	0.726			
Customer engagement (CE)	Involvement (IN)	0.847	0.921	0.918	0.737
	Interaction (INT)	0.829			
	Intimacy (INM)	0.901			
	Influence (INF)	0.856			
Business performance (BP)	Financial performance (FP)	0.785	0.885	0.886	0.798
	Market performance (MP)	0.988			

Table 7
Summary of testing of hypotheses.

Hypothesized path			Estimates(β)	Unstandardized Regression Weight	P	Result
CE	⟵	SMAP	0.140	0.193	***	Supported
BP	⟵	SMAP	0.143	0.174	***	Supported
BP	⟵	CE	0.194	0.170	***	Supported

Notes: β = *standardised beta coefficients;* P < 0.05, ***p < 0.005.

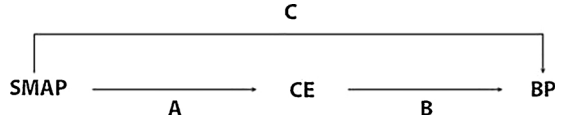
suggested by Gefen et al. (2000), GFI and NFI could not meet the criteria but the values were very close to the threshold. Thus we can conclude that the structural model is accepted as per fit indices. This allows us to continue examining the research hypothesis defined in our model.

Table 7 summarises the properties of the structural model (standardised path coefficients (β) and hypotheses result). The level of significance (α) is set at 0.05.

The results indicate that the strategic use of SMAP is significantly and positively related to CE (β = 0.140; p < 0.05), providing support for Hypothesis 1. There is a positive relationship between CE and BP (β = 0.143; p < 0.05), demonstrating that Hypothesis 2 is also supported. The results indicate that SMAP have a positive relationship to BP (β = 0.143; p < 0.05), indicating that Hypothesis 3 is supported. The estimates are consistent with the expectations due to the fact that the relationship is significant (p < 0.05) and in the anticipated direction.

5.4. Testing for mediation

In order to examine the mediation effect on customer engagement (Baron & Kenny, 1986), a four-step regression method was used. In our model SMAP are denoted by SMAP, BP and CE. The diagram below shows the mediation path of SMAP and BP.



Accordingly, the mediation effect in which SMAP leads to BP through CE is called the indirect effect. The indirect effect represents the portion of the relationship between SMAP and BP that is mediated by CE.

Step1: We conduct a regression analysis to identify the relationships between SMAP and BP to test the significance of path C.

$$BP = C_0 + C * SMAP + e \quad (1)$$

Step 2: We conduct a regression analysis to identify the relationships between SMAP and CE to test the significance of path A

$$CE = A_0 + A1 * SMAP + e \quad (2)$$

Step 3: We conduct a regression analysis to identify the relationships between CE and BP to test the significance of path B

$$BP = B_0 + B1 * CE + e \quad (3)$$

Step 4.

$$BP = \propto + C' * SMAP + B * CE + e \quad (4)$$

According to Baron and Kenny (1986), a full mediation occurs if the effect of a mediating variable (CE in this context) remains significant after controlling for independent variable (SMAP in this context). On the other hand, a partial mediation is deemed to have occurred if the relationship between the independent variable and the dependent variable is still significant after controlling for the effects of the intervening variable (i.e. SMAP construct and CE significantly predict BP). The summary of the mediation effect is given in Table 8. The results in Table 8 show that CE partially mediates the relationship between SMAP and BP (Direct effect 0.143***; Indirect effect 0.027***, supporting Hypothesis 4). The mediation results indicate that CE plays a significant role in boosting the effective use of SMAP on BP.

Table 8
Mediation effect of Customer Engagement.

Hypothesis path	Direct effect	Indirect effect	Result
SMAP - > CE- > BP	0.143***	0.027***	Partial mediation

6. Discussion and implications

The objective of this research has been to investigate and produce knowledge about the nature of causality existing between SMAP, CE and BP. The research has empirically generated valuable findings and has established that there is a causal relationship between SMAP, CE and BP consistent with Anjanita (2017) and Stephenson (2014) postulations. Our findings also confirm the mediation effect of CE on the relationship between SMAP and BP consistent with Parveen et al. (2015). In the current highly competitive global marketplace CE has significant imperative for businesses. With SMAP businesses can easily analyse the on-going interactions between an organisation and its customers. If the customer is engaged (or interested) in what the organisation or brand is doing it is clear that the customer will be more likely to engage with the business in term of purchases and contribute to improving its performance in the marketplace. CE is generally defined by the number of different actions on the part of the customer including purchases, social sharing, and referrals. SMAP analyses the nature and extent of the relationship that exists between an organisation and its customers which, in turn, is critical for a more precise analysis of the organisation's on-going growth and success. The results of this research lead to a number of important findings which have both theoretical and managerial implications.

6.1. Theoretical implications

Social media analytics is still a relatively new research area. The present research has provided a theoretical model that identifies positive and significant relationship between SMAP, CE and BP. Its main contribution is supported by the conceptual model depicted in Fig. 1. The conceptual model provides a foundation for future research in the area of SMA. In addition, we reinforce the findings of previous studies and several "white papers" which have pointed out the relationship between SMAP, CE and BP (Cognizant, 2014; SAS, 2011; The Enterprise Strategy Group, 2013). However, to the best of our knowledge this relationship has not yet been empirically investigated within the context of the Indian retail and IT industries. As such the present research can be said to have made a contribution in enhancing our overall understanding of these matters within the context of these industries in India. Furthermore, this research contributes to the existing body of knowledge by analysing the mediation effect of CE on the relationship between SMAP and BP.

6.2. Managerial implications

The objective of this research has been to examine the nature of relationship (if any) between SMAP, CE and BP. This research has empirically generated valuable findings and has established causal relationship between SMAP, CE, and BP. These results have enabled the validation of the hypothesis that strategic use of SMAP has a positive relationship between CE and BP. SMA helps the retail and IT organisations magnify their business presence, run a smart social media

campaign; reduce customer services/support costs by using social media monitoring process. It also enables the building of an active community by administering an online conversation and taking customer responses and opinions on a particular product and its services. In today's highly competitive global marketplace, businesses want to discover their customer's likes, dislikes, preferences and habits. Moreover, they want to track an integrated picture of customers across many contact points in the marketplace like, for example, how many leads can be brought in through social media efforts in addition to monitoring customer activity and interactions. Apart from examining customer-centric integrated information, businesses also want to know their competitors in order to evaluate the gaps by comparing competitors' strengths and weaknesses. In a nutshell, social media provides a wealth of information to retail and IT organisations. Real time SMA can help the retail and IT industries make effective business decisions. If retail and IT organisations are serious about social media marketing initiatives, then strategic use of SMA can enable these organisations to evaluate and understand customers' interactions, feedback and provide timely and effective responses.

CE has in recent years assumed an added significance for retailers. CE involves regular customer interaction which, needless to add, is an on-going activity. By engaging customers effectively organisations are able to gain competitive advantages, increase customer loyalty, enhance revenue, and manage their operational costs in an optimal manner. Highly engaged customers resolve issues with the organisation directly rather than complaining publicly about unsatisfactory shopping experiences. Moreover, highly engaged customers are more likely to encourage their friends and family to become customers. SMA enables more effective personal interaction, timely response to feedbacks, identifying and addressing the queries as soon as they arise, and so on. It also helps in delivering consistent, contextual, and adapted experiences using an effective data-driven strategy for engaging the customers with the retailers. SMA provides the capability to the retail organisation to understand what kind of media and content is driving customer engagement and how customers react. It further enables the sales and marketing team to develop more efficient and effective customer loyalty programs, product development and enhancement, pricing, and other important sales, marketing, and customer support activities. SMAP is serving retailers better in terms of aligning market strategies with CRM and actionable insights. SMAP measure the overall strategy of an organisation. Therefore, it becomes imperative for retailers to capture consumer data from social media in order to understand attitudes, opinions, and trends and manage online reputation to better serve their customers. Strategic use of SMA can benefit retailers in tracing the quality and quantity of a brand's reference across the entire social media; follow exchanges on chat forums, blogs and other social channels. By engaging customers effectively, retailers can gain competitive advantage, enhance business performance, and reduce their operational costs.

7. Conclusions, limitations and future research

The most significant conclusion of this research is that there is a positive relationship between SMAP and BP in which CE plays a key mediation role. It examines four research questions and to address these questions a comprehensive model was developed and tested using Structural Equation Modelling (SEM) analysis. This research provides empirical justifications for the existence of a causal relationship between SMAP, CE, and BP. It provides empirical evidence to support the theoretical and prescriptive statements in the literature. Its major contribution, however, is that it demonstrates, from an empirical perspective, the importance of SMAP for the retail and IT industries.

Despite these encouraging empirical findings, this research can also be said to have a number of limitations which affect its generalisation. Firstly, although we have considered widely accepted items of SMAP, CE and BP derived from the literature there is the possibility that we may not have included in the research some of the items which are less common in the literature. Moreover, the findings of our research relate solely to Indian retail and IT industries. As such it may not constitute a sufficient basis for generalisation. These limitations, however, pave the way for future research. To enhance the generalisation of the findings, the model used in this research can be tested by conducting cross-country studies in many geographic regions.

CRediT authorship contribution statement

Poonam Garg: Conceptualization, Data curation, Formal analysis, Writing - original draft. **Bhumika Gupta:** Data curation, Writing - original draft. **Sam Dzever:** Methodology, Writing - review & editing. **Uthayasankar Sivarajah:** Validation, Writing - review & editing. **Vikas Kumar:** Writing - review & editing.

Appendix A

Measurement

Measures of the Social media analytics practices (SMAP)

Note: All items are measured using 5-point Likert-type scales with strongly disagree (1) to strongly agree (5)

Items marked by an asterisk (*) were removed from the final instrument.

Customer management (CM)

SMAP/CM1: holistic and single view of the customer

SMAP/CM2: monitors customer activity and interactions

SMAP/CM3: track customer information in order to assess the lifetime value of each customer

SMAP/CM4: integrate customer information across customer contact points

Process management (PM)

SMAP/PM1: Social media analytics strategy is connected to business objective/ outcomes

SMAP/PM2: Customer information is integrated across several functional areas

SMAP/PM3: proactively mitigate the risk

SMAP/PM4: analyse the competitors and their posting strategy, social media campaigns, and followers and learn their best practices

Performance management (PEM)

SMAP/PEM1: Engagement or participation quantities

SMAP/PEM2: convert visitors into leads, and then into customers

SMAP/PEM3: Change in awareness or perceptions

SMAP/PEM4*: return on investment (ROI)

SMAP/PEM5: Incremental revenue

SMAP/PEM6: Incremental sales

SMAP/PEM7*: Prospects or leads generated

Measures of the Customer engagement (CE)

Note: All items are measured using 5-point Likert-type scales withNever (1) to all the time (5) *from the instrument.*

Involvement (IN)

CE/IN1: average time spent on each page/ number of pages visited

CE/IN2: Visit Frequency

CE/IN3: visit services

Interaction (INT)

CE/INT1: Customers usually post /likes/share /comment/recommend/ blog about the products

CE/INT2: Facebook Wall Interaction

CE/INT3: performing the core user action

Intimacy (INM)

CE/INM1: customer service issues/requests are being handled

CE/INM2: Sentiments toward the subjects and the emotions expressed by the authors

CE/INM3: are engage in two-way dialogue and develop deeper relationships and a value add experience

Influence (INF)

CE/INF1*: Referring traffic
CE/INF2: customer Invite / Refer
CE/INF3: Customer Retweets

Measures of the Business performance (BP)

Note: All items are measured using 5-point Likert-type scales with Decrease (1) to significant increase (5)

Items marked by an asterisk (*) were removed from the instrument.

Financial performance (FP)

BP/FP1: Return on investment
BP/FP2: Profit margin on sales

Market performance (MP)

BP/MP1: Market Share
BP/MP2: Customer satisfaction
BP/MP3: Customer retention
BP/MP4: Sales growth

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