EXAMINING THE IMPACT OF ORGANIZATIONAL AND CUSTOMERS' OPERANT RESOURCES ON WORD-OF-MOUTH IN PREVENTATIVE HEALTHCARE SERVICE: A COMPREHENSIVE ANALYSIS ON CHILDREN IMMUNIZATION

Taimoor Khan Mahsud[1]✉, Mahwish J. Khan[1]

[1] *Iqra University, Islamabad, Pakistan*

EUROPEAN JOURNAL OF BUSINESS SCIENCE AND TECHNOLOGY

Volume 10 Issue 2
ISSN 2694-7161
www.ejobsat.com

ABSTRACT

According to the service-dominant logic, the customers always contribute their resources to service delivery. This study adopts the service-dominant logic approach to social marketing in the context of preventative healthcare services for children immunization and investigates the influence of organizational (administrative quality, technical quality, and interpersonal quality) and customer operant resources (cultural resources, physical resources, and social resources) on word-of-mouth. Hierarchical multiple regression was used to test our hypotheses and the evidence indicated that all three quality dimensions of organizational operant resources significantly predict word-of-mouth behavior. Conversely, among three types of customer operant resources, social resources significantly predict word-of-mouth. The study contributes empirical insights to services marketing theory, social marketing theory, and practice.

KEY WORDS

service-dominant logic, social marketing, word-of-mouth, preventative healthcare, children immunization

JEL CODES

M31, M38

1 INTRODUCTION

Social marketing is influential for consumer behavioral change and has been traditionally examined through the value chain concept, with consumers perceived as being passive recipients of value. Researchers traditionally adopted the marketing mix concept of 4P's for social causes arguing organizations solely create value for customers. As the field progressed beyond traditional approaches, increasing body of scholarly work directed their research towards value co-creation by viewing consumers amidst multiple actors play an active role in the

MAHSUD, Taimoor Khan, and KHAN, Mahwish J.. 2024. Examining the Impact of Organizational and Customers' Operant Resources on Word-of-Mouth in Preventative Healthcare Service: A Comprehensive Analysis on Children Immunization. *European Journal of Business Science and Technology,* 10 (2): 185–204. ISSN 2694-7161, DOI 10.11118/ejobsat.2024.009.

social marketing domain (Domegan et al., 2013; French et al., 2017; Luca et al., 2016; Osborne, 2017; Zainuddin and Gordon, 2020; Zainuddin et al., 2013). This view is foundational in the service-dominant logic approach that has been popular since 2004 which changed the dynamics of how we view exchanges between multiple actors (Vargo and Lusch, 2004). This suggests that every exchange is a service-for-service and good is a service-provision medium. Goods are produced because there is a service (during production), goods are meant to provide service, and consumers earn a living by providing service to other organizations (or to same organization) to buy goods and services (masking service-for-service exchange network as barter system is not globally customary). This view further illustrates that service organizations providing services to customers without customers' participation cannot entirely create value. The Service-Dominant Logic approach has been adopted in social marketing research, particularly for services requiring consumer participation such as preventative healthcare services (Zainuddin et al., 2013). Consumers among multiple actors in the service eco-system contribute their resources by participating in service provision, and the notion that organizations solely create value gives limited insight into sources of value creation thus impeding impactful consumer research (Vargo, 2020). The purpose of preventative healthcare service is to screen consumers or immunize them against potential diseases, nationally or internationally. Behavioral change is sought through such programs that benefit society, for example, parents realizing that vaccination of children at an early age prevents potentially fatal or debilitating diseases. Service-dominant logic illustrates that customers are value co-creators which is true in children immunization because parents' participation as customers cannot be overlooked.

Veraciously, children's immunization is a preventative healthcare service that requires active consumer participation (Butt et al., 2020). Millions of children are still unimmunized during the scheduled routine immunization, despite cost-effective expanded immunization programs and better health strategies (Adnan et al., 2021). The low-income and developing countries of the world still account for a substantially high mortality rate either because children are not wholly immunized or they are partially immunized (Yunusa et al., 2021). According to 2021 survey, Pakistan ranked third with highest mortality rate of children under age 5 (United Nations Children's Fund, 2023) predominantly due to a lack of awareness about children immunization among parents and caregivers (Hussain et al., 2021). According to the Global Tuberculosis Report, 2023 by the WHO, Pakistan is among 30 high TB burden countries (World Health Organization, 2023). The recent official report about Pakistan indicates that the proportion of fully immunized children was 66 percent (NIPS and ICF, 2019), but still the goal of 95 percent immunization rate set by the world health organization has not been achieved (Shahid et al., 2023). This is a serious issue for developing countries like Pakistan (Butt et al., 2020; Riaz et al., 2018). Exploratory study conducted by Jinarong et al. (2023) indicated that word-of-mouth through relatives, neighbors, and volunteers is an effective source of information for parents and community regarding children's immunization. As word-of-mouth is instrumental in achieving social marketing goals of preventative health services in the long term, there is a need to investigate factors that predict positive word-of-mouth of vaccination services for children. Service-dominant logic a holistic view provides the conceptual lens for this study by allowing us to identify factors derived from operant resources, that affect word-of-mouth behavior (Hau, 2019; Zainuddin et al., 2013).

This study presents a framework elucidating word-of-mouth dynamics in preventative healthcare services, particularly focusing on customer behaviors regarding children's immunization. It investigates the influence of both organizational and customer factors on word-of-mouth perception. Consequently, this research contributes by investigating the effects of organizational and customer operant resources on word-of-mouth within the context of preventative healthcare services for chil-

dren's immunization. In order to achieve this objective, the study employs service quality dimensions – namely administrative quality (AQ), technical quality (TQ), and interpersonal quality (IQ) to signify organizational operant resources. Additionally, it incorporates cultural (CR), physical (PR), and social (SR) resources to represent customer operant resources.

2 LITERATURE REVIEW

2.1 Service-Dominant Logic View

Service-dominant-logic provides a unique perspective of exchanges taking place between actors of the societies and differentiates between the terms 'service' and 'services' (Lusch and Vargo, 2006; Vargo and Lusch, 2004; Vargo and Lusch, 2008). The plural term 'services' refers to either value-added services attached to goods such as the delivery of goods to consumers' location, or to a set of intangible, perishable, inseparable products such as healthcare service, consultation, or other services (Fisk et al., 1993). The singular term 'service' is the foundational premise for service-dominant logic and is defined as "the application of specialized skills and knowledge" (Vargo and Lusch, 2004). It is considered the fundamental unit for all exchanges between all actors (Vargo and Lusch, 2016). This argument holds true for all services and product-based industries because without the application of specialized skills, knowledge, and capabilities neither service can be provided nor goods be manufactured. Therefore, in service-dominant-logic literature, the application of knowledge, capabilities, and skills is the common ground for exchange, irrespective of the type of goods or services.

Moreover, the service-dominant-logic emphasizes operant over operand resources (Vargo and Lusch, 2017). Operand resources are tangible resources on which an action is performed to create an effect (e.g. raw material, or other tangibles), while operant resources are intangible resources such as knowledge, skills, capabilities, and technology deployed on operand or other operant resources (Constantin and Lusch, 1994; Vargo et al., 2020). Service-dominant-logic posits that its operant resources are the foundation for competitive advantages and strategic benefits for firms (Vargo and Lusch, 2017). Organizations strive for knowledge, skills, capabilities, technologies, etc. because their services do not carry value to customers without these aspects and raw materials do not turn into meaningful products to be consumed by consumers.

Value creation is not only an activity a firm or organization embeds in its products or services rather multiple actors are involved (Vargo and Lusch, 2016; Viglia et al., 2023; Wang and Kim, 2017). In support of this view Akaka and Vargo (2015) already had accentuated the role of multiple actors in value creation through exchange of operant resources among them. This proposition was widely accepted by marketing scholars notwithstanding Viglia et al. (2023) who meticulously scrutinized multi-stakeholder value cocreation in the service ecosystem. Consequently, this study embraces the contribution of customer as the main actor concomitant with the organization in service provision. In this study, organizational operant resources are the intangible inputs that add value to the customers' service experience in preventative healthcare. While customers' operant resources are the intangible inputs that parallel with inputs of organizational resources, add value to the customers' service experience, see also Zainuddin et al. (2013). However, do inputs of both organizational and customer operant resources predict word-of-mouth? This question was empirically analyzed in this study. This is where our study contributes to social marketing literature with a focus on preventative healthcare from children's immunization perspective.

2.2 Word-of-Mouth

Word-of-mouth is understood as an informal communication approach employed to dissemi-

nate recommendations or information from one person to another (Anderson, 1998; Westbrook, 1987). It is the practice of individuals communicating with others in their social circle. Leon and Choi (2020) emphasized that word-of-mouth tends to prevail if the organization has more satisfied customers. In a study conducted by Leon and Nakayama (2020), word-of-mouth was found to be influenced by the overall service quality perception of customers in the health insurance industry. In alignment with these studies, empirical evidence by Agyapong et al. (2018) indicated that patients who perceived high service quality are more likely to draw other customers to healthcare facility.

To promote vaccination uptake in the community, word-of-mouth tends to play crucial role (Ramkissoon, 2021). Kareklas et al. (2015) furnished evidence demonstrating that attitudes and behavioral intention towards vaccination were more influenced by word-of-mouth compared to public service announcement. This evidence was further acknowledged by Jose (2022) study where word-of-mouth was found one of the influential factors in adoption of vaccine. Attracting new customers from a social marketing perspective might be costly but recommendations through positive word-of-mouth can lay out a free platform to promote certain changes in behavior (Sadeh, 2017). Having in view the importance of word-of-mouth influence on behavioral aspect of the customers, this study proposes important predictors of word-of-mouth in children immunization strategy.

2.3 Organizational Operant Resources

Value in preventative healthcare service was found to be influenced by service quality indicators i.e. administrative, technical, and interpersonal quality (Zainuddin et al., 2013). Administrative quality is the most acceptable framework in the healthcare sector (Asif et al., 2019). In healthcare research in the Pakistani context, a significant relationship between both administrative and technical quality was found with patient satisfaction (Asif et al., 2019). Lu and Wu (2016) findings documented that patients who experienced higher technical quality are more inclined towards positive word-of-mouth and more likely to recommend the services to others. Fattahi et al. (2022) investigated the role of interpersonal quality in generating patient-perceived value and positive word-of-mouth in hospitals. They concluded that patients who perceived higher levels of interpersonal quality were more likely to engage in positive word-of-mouth communication about their hospital experiences. Ultimately, Dandis et al. (2022) found word-of-mouth significantly influenced by the three key aspects i.e. administration quality, interpersonal quality, and technical quality in university on-campus healthcare centers.

In general healthcare, a significant number of studies were based on Donabedian (1992) service quality dimensions (technical and interpersonal quality), Andaleeb (2001) service quality dimensions (reliability, empathy, confidence, and tangibles), or Zineldin (2006) service quality dimensions (technical, functional, infrastructural, interactional, and atmospheric quality). In preventative healthcare context, Dagger et al. (2007) service quality dimensions (administrative, technical, and interpersonal quality) were adopted by Zainuddin et al. (2013) as inputs of organizational resources abreast customer resources for breast cancer prevention strategies. We argue that organizational operant resources representing administrative, technical, and interpersonal quality also contextually fit as important factors in the children's immunization process to determine word-of-mouth intentions for several reasons. First, administrative quality determines how smoothly parents can get vaccination services for their children when they take a visit to the hospital or a vaccination center. Second, technical quality determines how technically sound the staff is. Vaccination by experienced staff may avoid hurting the child during the vaccination. Third, interpersonal quality makes parents more comfortable and confident while interacting with the staff. Therefore, these dimensions were adopted in this study from a social marketing perspective.

2.4 Customer Operant Resources

The study undertaken by Frempong et al. (2020) revealed the involvement of customer operant resources in word-of-mouth generation. Evidence from the Sarmah et al. (2018) investigation substantiated the relationship between customer operant resources and customer advocacy. According to the cultural resource-based theory of service-dominant logic, there are three types of customer-operant resources (Arnould et al., 2006). These resources are categorized into cultural resources, physical resources, and social resources.

Equally important, empirical support was found in the relationship between certain types of customer operant resources and service outcomes (Hau, 2019). The same study investigated the role of information and knowledge customers have (cultural resources) in the healthcare service process. A worthwhile contribution was found to service delivery by customers who were familiar and knowledgeable. Moreover positive relationship between the existing knowledge of patients and the degree of participation in the value creation was also evident. Thus, this paper acknowledges the significant role of specialized knowledge of parents (cultural resources) during children's vaccination, when integrates with staff's knowledge, may create positive experience for customers i.e. parents/caregivers.

Gallan et al. (2013) found a positive relationship between the patient's positivity and participation in service delivery which in turn improves service quality perception and ultimately creates satisfaction with the co-produced service experience. The level of positivity as it leads an individual to prepare for a difficult situation (Fredrickson et al., 2003) is related to self-efficacy. An analysis conducted by Frempong et al. (2020) uncovered positive relationship between self-efficacy and word-of-mouth. Parents with high self-efficacy would be less reluctant to go for their child's vaccination despite thoughts about possible repercussions that would act as bridge towards favorable service experience. While adding to the importance of social resources, Kang et al. (2010) found a significant influence of family members on patients' knowledge and the ability to cope with chronic disease. Mayberry and Osborn (2012) found that if there are family conflicts and non-support, it will lead customers towards poor adherence. Consistent with previous research, substantial dependability on family members was recognized when seeking healthcare (Sherman, 2019; Widayanti et al., 2020). Vaccination awareness among college students was also associated with family members in a study conducted in Beijing, China (Liu et al., 2020). Nonetheless, this study is focused on social operant resources that help and assist the parents of the child. Parents are directly or indirectly influenced by the social support from family, relatives, friends, etc. when a child is brought for vaccination. Apart from social circle, the most common example is the presence of both father and mother makes the vaccination and carrying of a child more manageable. Consequently, this collaboration overcomes obstacles toward a favorable service experience.

3 CONCEPTUAL FRAMEWORK

The conceptual framework (see Fig. 1) aims to identify the key drivers of word-of-mouth in preventative healthcare services, crucial for leveraging it as a potential long-term social marketing tool for behavioral change. Addressing key research gaps, it firstly fills the void of quantitative empirical studies elucidating word-of-mouth generation in this domain, thereby identifying factors influencing it. Secondly, it delves into the unexplored realm of multiple actors' roles in shaping word-of-mouth perceptions within social marketing preventative healthcare services. Specifically, it highlights the contributions of two pivotal actors i.e. Customers and Organizations, during the service-for-service exchange.

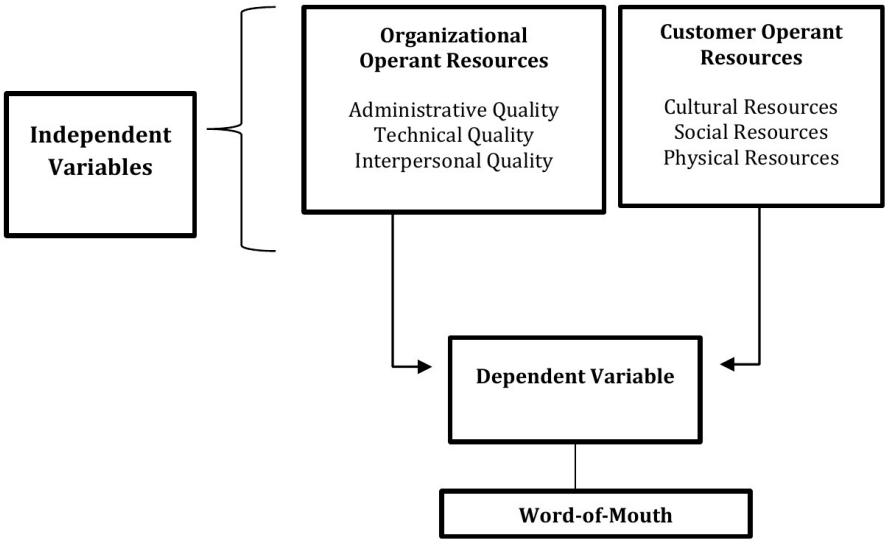

Fig. 1: Proposed Model of Organizational and Customer Operant Resources and Word-of-Mouth Behavior in Preventative Healthcare Service

3.1 Predictors of Word-of-Mouth in Preventative Healthcare Services

Administrative quality refers to processes that are facilitated by the systems of the organization (Dagger et al., 2007). Administrative quality encompasses administrative efficiency, support, service execution, and operations (Sony et al., 2023). It includes the aspects of a service organization that can smooth the path of core services which can add value to the service experience of the customer. Based on Abbasi-Moghaddam et al. (2019) study, administrative quality of hospital greatly influenced the positive perception of customers. This is hypothesized that the customer's experience with the administrative aspect of the organization during vaccination process would determine how customer engages in word-of-mouth, therefore:

H_1: *Administrative Quality (AQ) significantly predicts word-of-mouth in childhood immunization preventative healthcare services.*

Technical quality refers to the expertise of staff and other technical aspects like capabilities, competencies, proficiencies, qualifications, knowledge, or skills (Dagger et al., 2007). Technical quality of healthcare professional is responsible for better health outcomes except for cases where professional guidelines are violated (Currie and MacLeod, 2020). There is a high likelihood that parents during the vaccination of their child carefully evaluate the technical aspects of the staff. If the staff is experienced and effectively handles the vaccination process without hurting the child, then that may be the source of positive word-of-mouth therefore:

H_2: *Technical Quality (TQ) significantly predicts word-of-mouth in childhood immunization preventative healthcare services.*

Interpersonal quality refers to the relationship between service provider and customer that is interactive in nature and dyadic (Brady and Cronin, 2001). It includes the behavior, attitude, or manners of staff during interaction with the customers (Brady and Cronin, 2001). In preventative healthcare services, these aspects are responsible for the peace of mind and they have calming effect on customers (Kreuzer et al., 2020; Zainuddin et al., 2011). Additionally employee empathy positively influenced the trust level of customers on service provider (Bahadur et al., 2020). In this study we infer that interpersonal quality of customer-service provider interaction is the pre-dominant feature of the service, if favorably perceived by the customers; may serve as a basis for

recommending service to others through word-of-mouth. Therefore, the following hypothesis is formulated:

H_3: *Interpersonal Quality (IQ) significantly predicts word-of-mouth in childhood immunization preventative healthcare services.*

Customer cultural resources refer to the varying degrees and types of specialized knowledge, history, and imagination that customers orient themselves within (Arnould et al., 2006). Among these types, in healthcare generally (Hau, 2019) and preventative healthcare particularly, customers' knowledge of the procedure for health services is focused. Therefore, customer cultural resources are probed through the specialized knowledge of customers which might be a significant influencer during customer-service provider interaction. This type of specialized knowledge will thus act as a proxy for cultural resources (Hau, 2019). The more specialized knowledge of the customer, the more is the possibility that the customer will share relevant information with the service provider. Therefore cultural resources (specialized knowledge) would make customers active participants in service provision (Frempong et al., 2020). When a customer is knowledgeable about the procedure and disease, the knowledge gap between the customer and the staff is reduced, as a result the interaction becomes more effective (Hau, 2019). Therefore, the customer is more likely to indulge in positive word-of-mouth due to effective interaction which makes the encounter constructively meaningful; that is why this study anticipates the following hypothesis:

H_4: *Cultural Resources (CR) significantly predict word-of-mouth in childhood immunization preventative healthcare services.*

Social resources refer to the support that individuals gain from family, friends, and community on the other hand at a large scale (Arnould et al., 2006). These operant resources in social marketing play a pivotal role in encouraging an individual to adopt certain enduring behaviors. Unfolding evidence also indicates that social resources have been critical antecedent of preventative behaviors among population (Jetten et al., 2020; Stickley et al., 2021). Therefore, the customer with more social resources (assistance or support from family, friends, relatives, etc.) is likely to indulge in positive word-of-mouth as a consequence of benefits that the customer secured on account of support from family and relatives during the service encounter. That is to say the gap caused by lack of support during service encounter is filled by social resources. Based on this, the following hypothesis is predicted:

H_5: *Social resources (SR) significantly predict word-of-mouth in childhood immunization preventative healthcare services.*

Physical resources are defined in terms of the strength or capability of an individual, emotions, and energy an individual possesses (Arnould et al., 2006). For that reason, self-efficacy will be more suited as a proxy for physical resources (Hau, 2019). Self-efficacy is thought of as the individual capability to perform complex acts (Schwarzer et al., 1997). It is posited that self-efficacy explains the individual's perception of him or herself about the control he or she has over the action, which motivates the individual towards the enduring effort (Schwarzer et al., 1997). It is believed that self-efficacy guides the intention of an individual to initiate certain behaviors and continue them despite hardships or barriers (Farley, 2020). A Plethora of evidence suggests positive relationship between self-efficacy and engagement in preventative healthcare behaviors (Tan et al., 2021). Therefore, customers with high self-belief in his or her coping abilities of health problems are more likely to become active participants in word-of-mouth promotion due to the judgment of having high confidence in one-self of abilities they possess. Therefore the following hypothesis is anticipated:

H_6: *Physical resources (PR) or self-efficacy significantly predicts word-of-mouth in childhood immunization preventative healthcare services.*

4 METHODOLOGY AND DATA

This study is based on a quantitative approach for empirical investigation and data collection frequency was cross-sectional. Data collection was based on the expanded program on immunization (`www.epi.gov.pk`) as this program is in execution by the government of Pakistan with the help of the United Nations International Children's Emergency Fund (UNICEF). Immunization vaccines are provided to children by this program to immunize children against potential diseases and disabilities through public or private hospitals and vaccination centers. A convenient sampling technique was used to recruit the sample for hierarchical multiple regression. The sample comprised parents or caregivers of children in Pakistan, who have taken their child under the age of 2 for vaccination, see also Fredrickson et al. (2004). In response to pandemic restrictions, the online study was conducted through circulating Google form link.

4.1 Sample Attributes

This immunization program has a complete course for parents to vaccinate their children after a certain age of a child, see also (Riaz et al., 2018). The population size is infinite, the minimum required sample size calculated was 123 ($n = 123$) through an online sample size calculator (Soper, 2015) for hierarchical multiple regression with an anticipated effect size = 0.15, desired statistical power level = 0.9, and probability level = 0.05 (Cohen et al., 2013; Cohen, 1988). 263 valid responses based on the more recent encounters with childhood vaccination were qualified for further analysis. This considerably exceeds the minimum sample size of $n = 123$ calculated for this study.

The geographical representation comprised provinces (or states) that make up the whole country (Pakistan). The highest number of responses were received from Khyber Pakhtunkhwa (31.56%), followed by Punjab (20.53%), Balochistan (17.87%), Sindh (11.79%), Gilgit Baltistan (6.46%), Azad Jammu Kashmir (6.08%), Islamabad or capital of Pakistan (5.70%). Among all responses, 69.58% constitute male respondents ($n = 183$), and 30.42% constitute female respondents ($n = 80$). Most of the respondents were educated or literate. Respondents were also asked about the place, which falls under city or village. 69.96% of respondents selected 'city' ($n = 184$) and 30.04% of respondents selected 'village' ($n = 79$).

4.2 Scale Development

The used questionnaire in the current research study stemmed from the established research studies on healthcare services and preventative healthcare services. However, a few modifications were incorporated to measure the specific parental experiences during the child vaccination procedure. More precisely how these procedures/experiences exhibiting various significant categories of organizational and customer operant resources structure the word-of-mouth perception? Each construct was assessed using a 5-point Likert scale, where a score of 5 indicated strong agreement and a score of 1 indicated strong disagreement. The questionnaire for organizational operant resources to measure administrative, technical, and interpersonal quality was adapted from Zainuddin et al.'s (2013) study. The mentioned study was grounded on preventative healthcare services and drew upon items from Dagger et al. (2007). The items of administrative quality reflected customers' perception of standard, performance, and trust in administration. The items related to technical quality reflected customers' impression of the standard and performance of core service (vaccination) received at healthcare centers during childhood vaccination. The items pertaining to interpersonal quality were based on the customers' perception of kind of interaction they had with the healthcare staff.

The measuring instrument for customer operant resources (including cultural, physical, and social resources) and word-of-mouth were adopted from Hau (2019) and developed to be

employed in healthcare settings. The items of cultural resources comprised customers' knowledge about the service procedure, knowledge about childhood immunization, and comprehension of instructions during the vaccination process. The items related to physical resources or self-efficacy were based on questions related to one's strength and coping abilities to health problems faced by his or her child. Items of social resources included questions related to the acquiring of assistance and knowledge or experience from relatives, friends, or colleagues. The questionnaire for word-of-mouth, originally from Hau (2019), was grounded on previous studies by Eisingerich et al. (2014) and Zeithaml et al. (1996). Items related to word-of-mouth encompassed the extent to which parents or caregivers will share their experience, share positive aspects of the service encounter, and recommendations to others. The questionnaires comprised close-ended items.

The questionnaire was first translated into the national language of Pakistan (Urdu), which is widely understood and spoken throughout the country by all ethnicities. For that purpose professional translator was hired. When the translated version was received, it was back-translated to English by a Ph.D. scholar to examine if the translated version best fits the earlier version of the questionnaire and necessary adjustments were made accordingly (Hambleton, 1993). Once the translated version was ready, ten potential respondents were interviewed to check if it was clearly comprehended by the respondents and the responses were altogether positive.

4.3 Hierarchical Multiple Regression

This study employed hierarchical multiple regression analysis using SPSS 26 to assess the predictive significance of organizational operant resources (administrative, technical, and interpersonal quality) and customer operant resources (cultural, social, and physical resources) in relation to word-of-mouth regarding children's immunization. The researchers validated the assumptions of hierarchical multiple regression analysis, confirming data adequacy.

To address common method bias, the correlation matrix approach (Bagozzi et al., 1991) was applied using SPSS 26, ensuring that the correlation between any two constructs was below 0.9 (Pavlou et al., 2007). The study found correlations consistently less than 0.9, indicating no significant common method bias. Additionally, Cronbach's alpha reliability tests confirmed internal consistency, with values falling within the acceptable range for a small number of items (van Griethuijsen et al., 2015), as values for administrative, technical, and interpersonal quality were: 0.854, 0.864, and 0.861 respectively; cultural, physical, and social resources were: 0.749, 0.735, and 0.679 respectively.

The requirement for linear relationships between each independent and dependent variable, as outlined by Osborne and Waters (2002), was examined in this study. The scatter plots below (see Fig. 2, 3, 4, 5, 6 and 7) clearly demonstrate the presence of such relationships, thus confirming our assumption.

Data must exhibit absence of Multicollinearity among independent variables, such that inter-construct correlation should be less than 0.9 (Franke, 2010), with tolerance levels exceeding 0.2, and variance inflation factors below 5. In this study, all tolerance levels exceed 0.2 and variance inflation factors are below 5, thus statistical tests indicate absence of Multicollinearity. Furthermore, residuals should demonstrate independence, typically reflected in a Durbin-Watson value close to 2. For this study, the Durbin-Watson statistic was 1.895, aligning with this expectation. Additionally, homoscedasticity, indicating consistent variance of residuals, was confirmed (see Fig. 8) by observing no discernible funneling in the plot of standardized residuals versus standardized predicted values, as suggested by Berry and Feldman (1985).

Another assumption pertains to the normal distribution of residuals' values (Cook and Weisberg, 1982). While the P-P plot indicates some deviation from normality (see Fig. 9), it is noteworthy that only extreme deviations are likely to significantly affect the results.

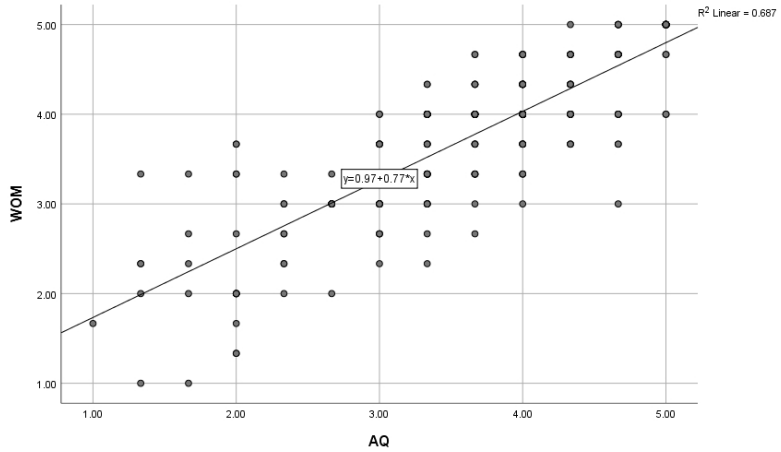

Fig. 2: Linear curve of Administrative quality (AQ) vs. Word-of-mouth (WOM)

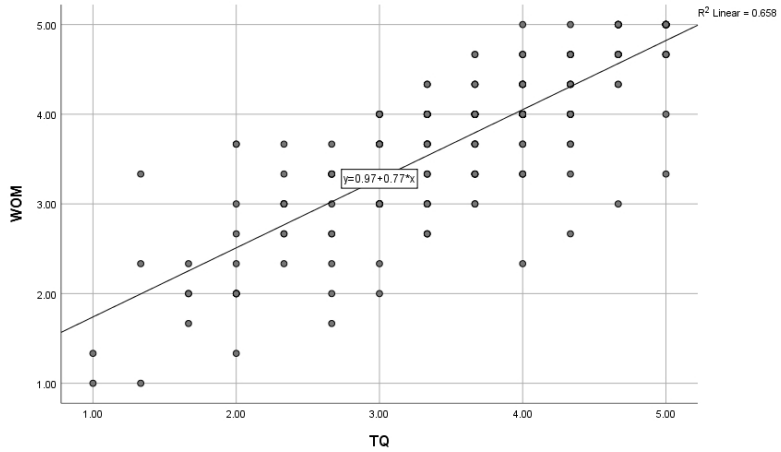

Fig. 3: Linear curve of Technical quality (TQ) vs. Word-of-mouth (WOM)

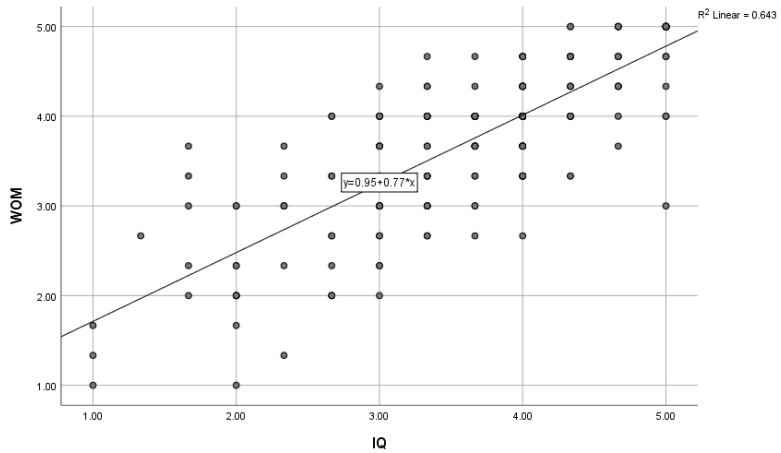

Fig. 4: Linear curve of Interpersonal quality (IQ) vs. Word-of-mouth (WOM)

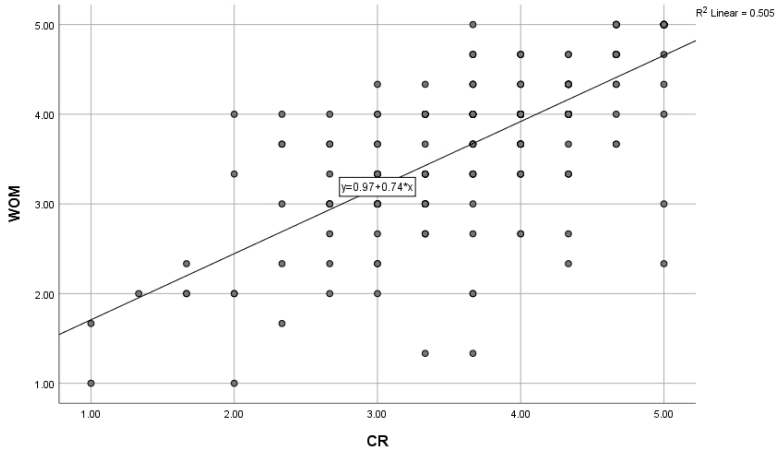

Fig. 5: Linear curve of Cultural Resource (CR) vs. Word-of-mouth (WOM)

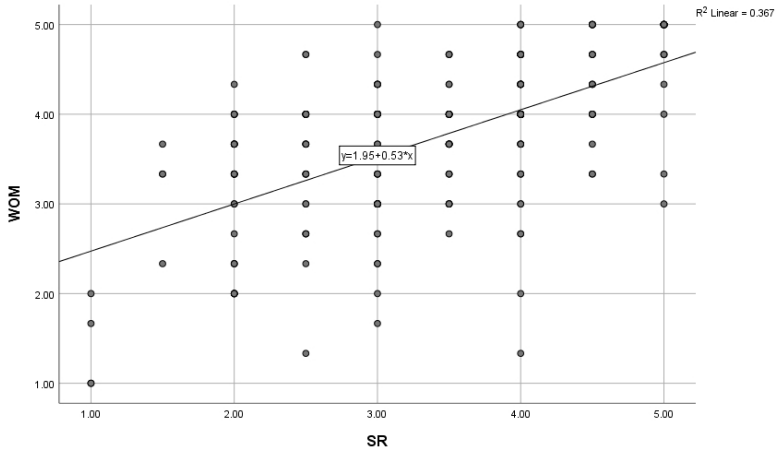

Fig. 6: Linear curve of Social Resources (SR) vs. Word-of-mouth (WOM)

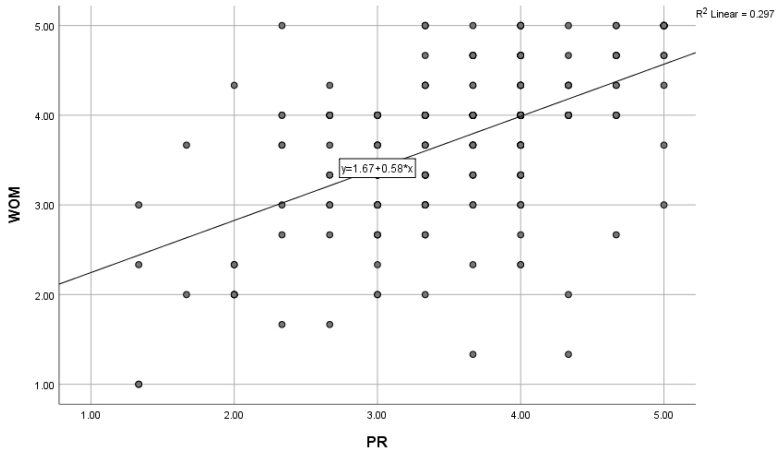

Fig. 7: Linear curve of Physical Resource or self-efficacy (PR) vs. Word-of-mouth (WOM)

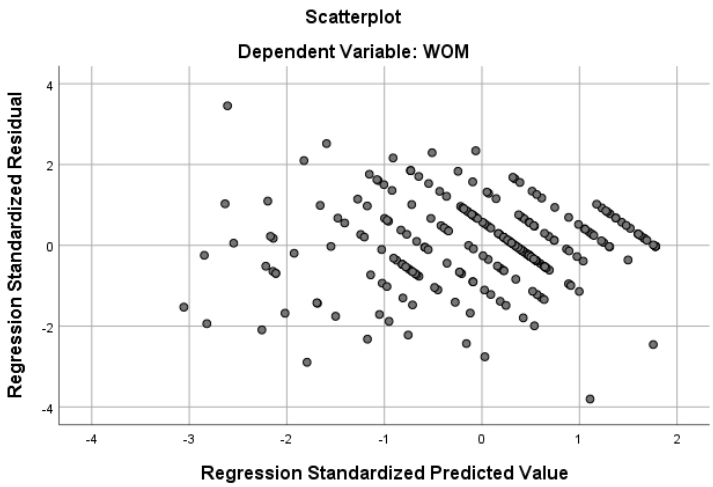

Fig. 8: Homoscedasticity

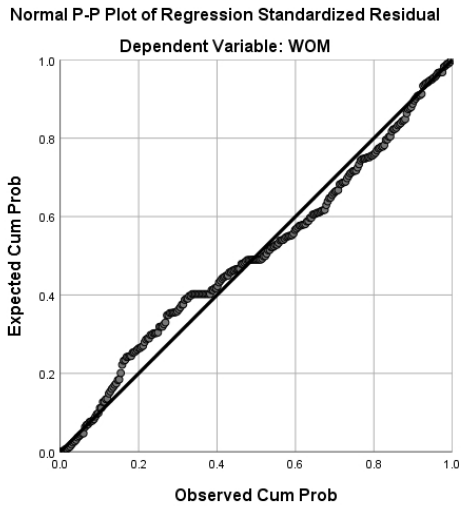

Fig. 9: Distribution of residuals' values

Therefore, the findings are deemed valid despite minor deviations.

The final assumption addresses potential bias from influential cases within the model. Results indicate that all Cooke's distance values were below 1, signifying that no individual cases exerted undue influence on the model (Cook and Weisberg, 1982).

5 RESULTS AND DISCUSSION

The study was organized to find out if various forms of operant resources can predict word-of-mouth. Therefore, it was hypothesized that administrative quality, technical quality, interpersonal quality, cultural resources, social resources, and physical resources were predicted to positively influence word-of-mouth. To test these anticipations, a hierarchical multiple re-

gression analysis was applied. Findings indicate that 74.8% of the variance in word-of-mouth is accounted for by explanatory variables collectively, $F(6, 256) = 130.935$, $p < 0.001$. By inspecting individual contributions of the explanatory variables, the result shows that administrative quality ($B = 0.355$, $t = 5.325$, $p < 0.001$), technical quality ($B = 0.211$, $t = 3.094$, $p = 0.002$), interpersonal quality ($B = 0.233$, $t = 3.509$, $p = 0.001$), social resources ($B = 0.113$, $t = 2.799$, $p = 0.006$) significantly predict word-of-mouth. Thus, supporting hypotheses H_1: AQ $\rightarrow$ WOM, H_2: TQ $\rightarrow$ WOM, H_3: IQ $\rightarrow$ WOM and H_5: SR $\rightarrow$ WOM. Conversely, the results show that cultural resources ($B = 0.014$, $t = 0.251$, $p = 0.802$) and physical resources or self-efficacy ($B = 0.043$, $t = 1.041$, $p = 0.299$) do not significantly predict word-of-mouth, thus rejecting the hypotheses H_4: CR $\rightarrow$ WOM, and H_6: PR $\rightarrow$ WOM (see Tab. 1 and 2).

The purpose of this study was to provide empirical evidence about the role of organizational and customer operant resources in word-of-mouth generation. This study contributes to the rapidly growing body of literature on service-dominant logic, by emphasizing the importance of operant resources and organizational and customers' roles in word-of-mouth generation.

Among the three components of a customer's operant resources (i.e. cultural, social, and physical resources), social resources were found to significantly predict word-of-mouth supporting H_5: SR $\rightarrow$ WOM. When children are un-vaccinated or sick and need preventative healthcare against potential diseases, many of the parents due to the bearing of children and other day-to-day responsibilities of the family are not in habitual physical and mental state. Parents in these circumstances who own strong social support or social resources are capable of employing resources from others (family members, relatives, neighbors, friends, etc.) and are likely to benefit from these resources (Hau, 2019). These results are in line with Frempong et al. (2020), Hau (2019), Jetten et al. (2020), and Stickley et al. (2021), who underscored the significance of social resources in healthcare services and therefore, increased the prominence of relatives, neighbors, and friends associated with customers as the actors in the value-creation network (Vargo et al., 2023; Viglia et al., 2023). Therefore, the contribution of social resources of customers' abreast organizational operant resources during service provision conforms to the service-dominant logic hallmark that suggests multiple actors' contribution. Consequently, this study also affirms that the parents or caregivers, who are aware of the importance of childhood vaccination, are more likely to act as social resources when helping non-vaccinated children's parents by sharing their knowledge and experience about the vaccination and immunization of the children.

In contrast, the result shows that physical resources (or self-efficacy) have no significant impact on word-of-mouth rejecting H_6: PR $\rightarrow$ WOM. In preventative healthcare services for children, parents are relatively weaker in their physical and mental state of mind due to anxiety, worry about their child, sensitivity, and fear. Consequently, low physical and mental strength would often put limitations on the capabilities of parents to assemble and deploy their operant resources in the service process (Hau, 2019). These limitations also restrain the deploying of cultural resources or specialized knowledge of customers during service provision which disturbs the predictive capabilities of cultural resources towards word-of-mouth, therefore, rejecting H_4: CR $\rightarrow$ WOM.

Moreover, the role of the organization as an actor is also of critical importance in service-for-service exchange in value creation (Chandler and Vargo, 2011). In this study, the role of the organization was conceptualized through the contribution of operant resources according to the theory of service quality specifically administrative quality, technical quality, and interpersonal quality (Dagger et al., 2007). There was a significant relationship evident between these three operant resources and word-of-mouth thus supporting H_1: AQ $\rightarrow$ WOM, H_2: TQ $\rightarrow$ WOM, and H_3: IQ $\rightarrow$ WOM. These results corroborate the findings of other studies in the healthcare context (Dandis et al., 2022; Fattahi et al., 2022; Lu and Wu, 2016). The administrative quality which refers

Tab. 1: Final Regression with 95% confidence interval

	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for *B*	
Model	***B***	**Std. Error**	**Beta**	***T***	**Sig.**	**Lower Bound**	**Upper Bound**
Constant	0.461	0.138		3.353	0.001	0.190	0.732
Administrative Quality (AQ)	0.328	0.062	0.355	5.325	0.000	0.207	0.449
Technical Quality (TQ)	0.200	0.065	0.211	3.094	0.002	0.073	0.328
Interpersonal Quality (TQ)	0.222	0.063	0.233	3.509	0.001	0.098	0.347
Cultural Resource (CR)	0.015	0.059	0.014	0.251	0.802	−0.101	0.131
Social Resource (SR)	0.098	0.035	0.113	2.799	0.006	0.029	0.166
Physical Resource (PR)	0.046	0.044	0.043	1.041	0.299	−0.041	0.134

Note: Dependent variable is word-of-mouth.

Tab. 2: Summary of Findings

Hypothesis	**Regression Weights**	***B***	***t***	***p*-value**	**Hypothesis Supported**
H1	AQ → WOM	0.355	5.325	0.001	Yes
H2	TQ → WOM	0.211	3.094	< 0.001	Yes
H3	IQ → WOM	0.233	3.509	0.002	Yes
H4	CR → WOM	0.014	0.251	0.802	No
H5	SR → WOM	0.113	2.799	0.006	Yes
H6	PR → WOM	0.043	1.041	0.299	No
R^2	0.748466			< 0.001	
$F(6, 256)$	130.935				

Note: This table shows the summary of findings for the hypothesized relationship.

to relative ease and smoothness provided by the organization during the service process had a meaningful impact on word-of-mouth. The second impact on word-of-mouth is attributed to interpersonal quality. Interpersonal quality was measured by interactive aspects of healthcare staff with customers (parents). Consequently, the staff and employees of the organization play a crucial role in generating word-of-mouth, making employees another actor in the service system (Vargo et al., 2020). Equally important, the perceived expertise of the staff and employees, which was conceptualized by technical quality also significantly predicts word-of-mouth as per the findings of this study. Therefore service employee is a critical touch-point of service organizations facilitating preventative healthcare services. Aiding these propositions, the organizational resources need to be modified in a way that will create a positive perception of the experience during the encounter with the service provider.

In Pakistan, a common reason for non-vaccination or incomplete vaccination is a lack of parents' or caregivers' awareness about immunization (Hussain et al., 2021). This study addresses the problem of non-vaccination through word-of-mouth (Balraj and John, 1986) by investigating causative factors. Based on this study, these causative factors (operant resources) would predict the vaccinated child's parents or caregivers' intention to recommend the centers specific in their respective areas or counties, to their neighbors, relatives, and friends, by sharing their experiences and saying positive words. However, future studies can explore the relationship between positive word-of-mouth intention and an increase in actual participation or how word-of-mouth intention acts as an effective promotion medium for behavioral change in the childhood vaccination context. This is more desired to achieve long-term social marketing goals.

The vaccine is interpreted as an operand (rather operant) resource according to service-dominant theory. We argue that it is a crucial tangible product on which operant resources are applied (specialized skills and knowledge). However, mere vaccines availability in immunization strategy might not encourage promotion through word-of-mouth. Overall administrative setting of preventative healthcare should be designed to provide a more robust and smooth service flow in conjunction with the competence and interpersonal skills of the staff. This will integrate the organizational and customers' operant resources into more contextual value-creation activities, which is likely to increase positive word-of-mouth (Chandler and Vargo, 2011). Furthermore, it is understood that value-creation is not limited to an organization as the customer is value co-creator from a general perspective, which ultimately benefits the customer as a beneficiary (Vargo and Lusch, 2016). The study indicates empirical evidence for this proposition in childhood vaccination. The customer brings social resources such as assistance and support from relatives, family, and friends which are crucial before, during, and after childhood vaccination. This necessarily improves the service provision and leads to positive word-of-mouth.

6 CONCLUSION

The study contributes empirical insights to social marketing theory, particularly from a service-dominant logic perspective, and expands the literature on preventative healthcare services. By focusing on word-of-mouth behavior in the context of children's immunization services and elucidating operant resources in preventative healthcare services, it enhances understanding in these domains.

Employing hierarchical multiple regression analysis, the study underscores the significance of service quality dimensions in generating word-of-mouth, highlighting the pivotal role of customer-service provider interactions and interpersonal dynamics in preventative healthcare contexts. In addition, it underscores the personal nature of word-of-mouth generation in such services, providing valuable empirical evidence previously lacking in social marketing literature. Based on this study, we assert that in preventative healthcare campaign strategy, targeting parents for children immunization would not suffice the potential response and impact. The social marketers should target other actors represented in their campaigns as social resources influences consumers toward certain behavioral change. However, the question arises, what responsibilities fall on the service provider in the absence of social resources? We argue that an organization needs to have a holistic view and train their staff in a fashion that makes the staff act as a social resources, fulfilling the need to have a social circle before, during, and after service provision.

Our findings benefit social marketing researchers and scholars interested in this domain, as well as policymakers and social marketing organizations. We encourage future researchers to employ sampling techniques other than convenience sampling to remove generalization concerns, as well as conduct comparative studies of these factors on online vs. offline word-of-mouth behavior. Moreover, while internet penetration in Pakistan presents a valid limitation, alternative methods of data collection such as paper-based surveys can be considered for future research endeavors, as these methods could help ensure the inclusivity and representation of populations with limited internet access. While the study examines factors influencing word-of-mouth behavior, its impact on actual participation rates remain unexplored, indicating a critical area for future inquiry. Recognizing these avenues of future research is crucial for ensuring the robustness of findings in the field of social marketing and preventative health care services.

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8 ANNEX

Constructs	Items	
Administrative quality	AQ_1:	The administration system at the place where my child was brought for vaccination last time was excellent
	AQ_2:	The administration at the place where my child was brought for vaccination last time was of a high standard
	AQ_3:	I have confidence in the administration system at the place where my child was brought for vaccination last time
Technical quality	TQ_1:	The quality of the service I received at the place where my child was brought for vaccination last time was excellent
	TQ_2:	The service provided at the place where my child was brought for vaccination last time was of a high standard
	TQ_3:	I am impressed by the service provided at the place where my child was brought for vaccination last time
Interpersonal quality	IQ_1:	The interaction I had with the staff at the place where my child was brought for vaccination last time was of a high standard
	IQ_2:	The interaction I had with the staff at the place where my child was brought for vaccination last time was excellent
	IQ_3:	I feel good about the interaction I had with the staff at the place where my child was brought for vaccination last time
Physical resource/self-efficacy	PR_1:	I can always manage to solve my child's health problems if I try hard enough
	PR_2:	I can remain calm when my child is facing health difficulties because I can rely on my coping abilities
	PR_3:	When my child is confronted with a health problem, I can usually find a solution
Cultural resources	CR_1:	I knew well what I need to do during the vaccination at the place where my child was brought for vaccination last time
	CR_2:	I knew how to make the immunization and vaccination to be best benefits for my child
	CR_3:	I understood easily the instructions during the vaccination process at the place where my child was brought for vaccination last time
Social resources	SR_1:	I receive useful assistance from my relatives, friends, or people around me during my child vaccination process
	SR_2:	Relatives, colleagues, or friends share with me their knowledge/experience about vaccination or immunization of children
Word-of-mouth	WOM_1:	I share my experience with other people about the place where my child was brought for vaccination last time
	WOM_2:	When I have the chances, I will say positive things with others about the place where my child was brought for vaccination last time
	WOM_3:	I recommend the last place where my child was brought for a vaccination to others who seeks my advice

AUTHOR'S ADDRESS

Taimoor Khan Mahsud, Iqra University, 5 Khayaban-e-Johar, Sector H-9/1, Islamabad Capital Territory, Pakistan, e-mail: iammahsud2000@gmail.com (corresponding author)

Mahwish J. Khan, Iqra University, 5 Khayaban-e-Johar, Sector H-9/1, Islamabad Capital Territory, Pakistan, e-mail: mahwishjamil@gmail.com