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The effect of phygital showroom immersion on purchase enchantment among Iraqi consumers: The mediating roles of sensory vividness and brand self-congruity

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Abstract: Retailers are witnessing the proliferation of immersive phygital showrooms that merge physical and digital components, but there is a dearth of quantitative evidence explaining how these settings impact on consumers' more profound emotional experiences, especially within Arab emerging markets. Based on the stimulus–organism–response framework, this study examines how phygital showroom immersion influences purchase enchantment, either directly or indirectly through two organismic mechanisms: sensory vividness as a perceptual route and brand self-congruity as an identity route. Data are collected from 400 Iraqi consumers who had recently used electronics, fashion or automobile phygital showrooms in four cities using a purposive (non-probability) intercept procedure and analyzed using the partial least squares structural equation modelling (PLS-SEM). Phygital showroom immersion was positively related to sensory vividness, brand self-congruity and purchase enchantment. Purchase enchantment was positively correlated with sensory vividness and brand self-congruity, respectively. Brand self congruity was the best predictor. Sensory vividness was not significantly related to brand self congruity as expected. Sensory vividness and brand self-congruity mediated the relationship between immersion and enchantment in parallel, but the hypothesized serial mediation was not supported. The model explained 41.7% of the variance in purchase enchantment. The findings push forward experiential and phygital retailing research to an under-researched Arab market, and provide retailers with evidence-based guidance on designing immersive phygital formats that evoke enchantment. Due to the cross-sectional, non-probability design, the results have to be understood as suggestive of associations rather than causal effects.

الانغماس في صالات العرض المندمجة والانبهار الشرائي لدى المستهلكين العراقيين: الدور الوسيط للوضوح الحسي والتطابق الذاتي مع العلامة التجارية

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المستخلص

يشهد تجار التجزئة الإلكترونيون انتشاراً متزايداً لصالات العرض المادية-الرقمية الغامرة التي تدمج بين المكونين المادي والرقمي، غير أن الأدلة الكمية التي تفسر كيفية تأثير هذه البيئات في الخبرات الانفعالية الأعمق لدى المستهلكين لا تزال محدودة، ولا سيما في الأسواق العربية. واستناداً إلى إطار المثير-الكائن-الاستجابة، تناولت هذه الدراسة الكيفية التي يؤثر بها الانغماس في صالات العرض المادية-الرقمية في الانبهار الشرائي، سواء على نحو مباشر أو غير مباشر عبر آليتين هما: الوضوح الحسي بوصفه مساراً إدراكياً، والتطابق الذاتي مع العلامة التجارية بوصفه مساراً هوياتياً. وقد جمعت البيانات من 400 مستهلك عراقي ممن سبق لهم استخدام صالات العرض المادية-الرقمية الخاصة بالإلكترونيات، الأزياء، السيارات في أربع مدن، وذلك باعتماد العينة القصدية غير الاحتمالي، ثم حلت باستخدام نمذجة المعادلة البنائية بطريقة المربعات الصغرى الجزئية (PLS-SEM).

وأظهرت النتائج أن الانغماس في صالات العرض المادية-الرقمية يرتبط ارتباطاً إيجابياً بالوضوح الحسي، والتطابق الذاتي مع العلامة التجارية، والانبهار الشرائي. كما ارتبط الانبهار الشرائي ارتباطاً إيجابياً بكل من الوضوح الحسي والتطابق الذاتي مع العلامة التجارية على التوالي، وكان التطابق الذاتي مع العلامة التجارية أقوى المتنبئات. أما الوضوح الحسي فلم يرتبط ارتباطاً دالاً إحصائياً بالتطابق الذاتي مع العلامة التجارية، خلافاً لما كان متوقعاً. وقد توسط كل من الوضوح الحسي والتطابق الذاتي مع العلامة التجارية العلاقة بين الانغماس والانبهار على نحو متوازي. وفسر النموذج ما نسبته 41.7% من التباين في الانبهار الشرائي.

وتسهم هذه النتائج في دفع أبحاث تجارة التجزئة الاختبارية والمادية-الرقمية نحو سوق عربية لم تتل حظها من البحث كما تزود تجار التجزئة بإرشادات قائمة على الأدلة بشأن تصميم الصيغ المادية-الرقمية الغامرة التي تستثير الانبهار.

الكلمات المفتاحية: التجزئة الإلكترونية، الانغماس في صالات العرض، الوضوح الحسي، التطابق الذاتي مع العلامة التجارية.

1. Introduction

Today the retail sector is in deep transformation for the integration between physical stores and digital touchpoints, giving rise to integrated environments called “phygital” (Batat, 2024b; Mele & Russo-Spena, 2022). Physical spaces now feature AR mirrors, VR configurators, interactive screens and app-linked displays, transforming shopping trips into orchestrated, technology-filled journeys (Grewal et al., 2020; Roggeveen et al., 2020). This is in line with an overarching movement in marketing to offer

memorable experiences rather than products (Pine & Gilmore, 1998) and demands that retailers orchestrate the customer journey in a holistic manner across blended channels (Lemon & Verhoef, 2016; Verhoef et al., 2015). Showrooms are well placed in this transition, as they are supposed to enable customers to live and touch products in evocative environments, and their role in omnichannel systems is well known (Bell et al., 2018). Emerging evidence suggests positive consumer outcomes from immersive retail technologies. AR try-ons lead to higher online sales (Tan et al., 2022). AR can alleviate the necessity for consumers to generate mental imagery and enhance frontline retail performance (Heller et al., 2019) and online service experiences (Hilken et al., 2017). Virtual, augmented and mixed realities modify customer experience in different ways (Flavián et al., 2019). VR immersion is associated with satisfaction and loyalty (Hudson et al., 2019). 3 holes to go still. Second, most studies focus on a single technology (e.g., AR app, VR headset) and do not explore consumers' immersion in a combined store-level environment (Rauschnabel et al., 2022; Wedel et al., 2020). Second, outcome measures have been mostly utilitarian or behavioural (e.g., purchase intention and sales). Few quantitative studies have examined deeper emotional outcomes of technology-rich shopping. Third, the evidence comes from North American, European and East Asian markets, and Arab emerging markets are relatively under-researched (Burgess & Steenkamp, 2006; Sheth, 2011).

Two psychological mechanisms that are theoretically promising but have seldom been studied together as pathways from immersion to emotional responses. First is sensory vividness, defined as the richness and intensity of the sensory impressions evoked by an environment (Petit et al., 2019; Steuer, 1992). The effect of higher involvement, imagery and elaboration makes store environments more vivid (Grewal et al., 2020; Yim et al., 2017). Judgement and emotion are affected by sensory stimulation (Krishna, 2012). The second is brand self-congruity, which refers to the perceived fit between the brand image and self-concept of the consumer. This is one of the more reliable predictors of consumer evaluations (Aguirre-Rodriguez et al., 2012; Sirgy, 1982). To date, perceptual and identity mechanisms have been studied in isolation, and only a few studies have investigated sensory vividness and brand self-congruity as parallel mediating mechanisms in an integrated framework. Enchantment, the process of making the ordinary special, has

been widely studied through interpretative lenses, with some researchers admitting that we know very little about how marketing creates enchantment for consumers (Hartmann & Brunk, 2019; Ritzer, 2010). The following research question is therefore addressed in this study. What is the association between Phygital Showroom Immersion and Purchase Enchantment in Iraqi Consumers, and how much do Sensory Vividness and Brand Self Congruence mediate the association? Iraq is a relevant and understudied context. The Middle East is a young market that is digitising at speed, introducing experiential and phygital retail concepts where the experience of developed markets may not be transferable to such contexts (Burgess & Steenkamp, 2006; Sheth, 2011). We extend the S-O-R paradigm by proposing and testing a model linking immersion in phygital electronics, fashion and automobile showrooms to purchase enchantment directly and indirectly through the two above organismic mechanisms. Data were collected from a cross-sectional survey of 400 consumers who recently visited showrooms in four cities of Iraq and analysed using PLS-SEM in SmartPLS 4.0 (Hair et al., 2016; Ringle et al., 2024). The study has four contributions. Second, it conceptualises and measures phygital showroom immersion as an integrated store-level construct. It offers quantitative evidence of its association with purchase enchantment, contributing to the current phygital customer-experience literature that has been largely conceptual and qualitative (e.g., Batat, 2024b; Mele & Russo-Spena, 2022). The second identified two organismic pathways (perceptual pathway – sensory vividness, identity pathway – brand self-congruity) by the S-O-R framework and demonstrated their parallel (not sequential) processing. Third, it brings the magic of interpretive consumer research into the quantitative experiential-retail modelling domain, where magic is seen as a measurable outcome at the point of purchase and responds to the demand for an explanation of the way marketing enchants consumers (Hartmann & Brunk, 2019). Fourth, it adds the experiential-retail research domain to Iraq, which is a relatively less researched but fast digitising market and translates the estimates into managerial priorities by importance performance map analysis (Ringle and Sarstedt, 2016).

2. Theoretical background and hypotheses development

2-1. The stimulus–organism–response framework: The current study applies the S-O-R framework (Mehrabian & Russell, 1974) that suggests that external stimuli (S) generate internal organismic states (O) that subsequently

affect response tendencies (R). This framework has been a staple in retail environment research since its application to store atmosphere by Donovan and Rossiter (1982). It is the foundation of the servicescape approach to the effects of the physical environment on customer responses (Bitner, 1992). This was later extended to online and digital atmospherics (Eroglu et al., 2001) and more recently to technology-based touchpoints along the customer journey (Roggeveen et al., 2020). Meta-analyses of store environment studies show generalisability of the S-O-R sequence but heterogeneity in the size of the effects (Vieira, 2013).

The environmental stimulus (S) in the current model is the phygital showroom immersion, or the combination of physical merchandising & digital technologies. The objective of this stimulus is to produce two organismic states (O). The perceptual face of the organism is sensory vividness, the intensity and lifelikeness of the sensory impressions from the environment. The symbolic/identity dimension is the “brand self-congruity”, i.e., the perceived similarity between the displayed brands and the shopper’s self-concept. The last proposed affective-experiential response (R) is the positive high wonder feeling experienced during the purchase episode, i.e., the purchase enchantment.

The original formulation often conceptualised the organism as emotional states (pleasure-arousal-dominance) and the response as approach/avoidance behaviour (Mehrabian & Russell, 1974). But it must be accounted magic. Our tradition of experiential and retailing research distinguishes between intermediate organismic appraisals and a focal culminating experiential state as manifestations of the consumer response to the environment (Babin et al., 1994; Holbrook & Hirschman, 1982). Thus, sensory vividness and brand self-congruity are appraisal-type organismic mechanisms (perceptual processing and identity comparison, respectively), with enchantment being the holistic affective concomitant of these appraisals that is expected to drive downstream behaviours such as patronage and loyalty (beyond the scope of the present study). We are aware of the fact that this categorisation is a theoretical choice which we discuss in the limitations (Section 5.4).

Other experiential conceptual constructs include immersion, enchantment and sensory vividness. We see them as separate but interrelated. Immersion: Living in the mixed milieu. Stimulus: Sensory vividness –

density of sensory experience in experience Great appraisal insight. Interest of Affective State (later). 4.2 Tests on the empirical distinctiveness of these constructs Convergent and discriminant validity tests The study models a perceptual and an identity route, thereby capturing the consumption experience perspective. Sensory and identity types are actualised through different mechanisms (Holbrook & Hirschman, 1982; Babin et al., 1994).

2-2. Phygital showroom immersion: Phygital retailing is more than multi-channel retailing but combines physical and digital components into one seamless customer experience (Batat, 2024b). Smart technologies facilitate phygital formats that combine the physical and digital across the customer journey (Mele & Russo-Spena, 2022) and embed technology in humanised physical spaces (Pangarkar et al., 2022). The showroom is a natural candidate for phygital design, as it offers a physical space for customers to discover and try products and also provides demand generation and operational benefits in omnichannel systems (Bell et al., 2018). The AR mirrors, VR configurators, smart displays and app continuity turn the traditional showroom into a fully immersive brand environment (Grewal et al., 2020; Lawry, 2022).

Immersive refers to a high degree of involvement in an activity or an experience and a low degree of awareness of the surrounding environment (Carù & Cova, 2003). In psychology, immersion is closely related to flow, a state of complete concentration, involvement and enjoyment (Csikszentmihalyi, 1990). In marketing, it is closely related to telepresence, the sense of “being there” in a mediated environment (Mollen & Wilson, 2010; Steuer, 1992), and has been used to characterise highly engaging computer-mediated experiences (Hoffman & Novak, 1996). Drawing on these ideas, we define phygital showroom immersion (PSI) as the extent to which a shopper is immersed in a phygital environment with physical products and digital technologies. Sometimes the literature distinguishes between immersion and engagement, where engagement refers to motivated interaction and immersion to absorption. However, our conceptualisation and measure focus on absorption in the blended environment, with engagement-related items only to the extent that they also reflect this absorption. The importance of immersion in the shopping experience has been previously shown: mediating the relationship between interactive features and satisfaction and loyalty in VR (Hudson et al., 2019) and

channelling the enjoyment and usefulness consumers derive from AR-based commerce through interactivity and vividness (Yim et al., 2017).

2-3. Sensory vividness: Vividness is the degree to which a medium represents an environment richly in breadth (the number of senses triggered) and depth (the amount of information transmitted within each sensory channel) (Steuer, 1992). Vivid information is concrete, image-provoking and emotionally engaging (Taylor & Thompson, 1982) and leads to more profound processing of what is perceived (MacInnis & Price, 1987). Research in sensory marketing has shown that engaging the senses alters the way consumers perceive, judge, and behave when processing abstract information (Krishna, 2012), and that vivid product depictions can trigger embodied mental simulations of product usage (Elder & Krishna, 2012). Sensory vividness is related to mental imagery but is different from it. Vividness is a property of the stimulus or environment (i.e., the richness and lifelikeness of the presentation), and mental imagery is the internal representation formed by the consumer in response. In this research, we define sensory vividness as the consumer's perception of stimulus richness and employ the clarity of the mental images evoked by the presentation as one indicator of that richness, rather than as a separate construct. Sensory vividness (SV) is therefore defined as "the consumer's perception that the showroom presents the products in a lifelike and multisensory manner that creates vivid and detailed impressions." In the limitations (Section 5.4) we return to the conceptual and operational boundary between vividness and imagery.

2-4. Brand self-congruity: Self-congruity theory states that consumers evaluate the congruence of a brand with self-concept through matching the symbolic image of the brand and the typical user of the brand to their own self-image (Sirgy, 1982). Brands are identity resources (Escalas & Bettman, 2005) and brand imagery helps consumers to construct and express identity (Aguirre-Rodriguez et al., 2012). Meta-analysis has indicated that the self-congruity effect is generalisable across products, contexts and outcomes (Aguirre-Rodriguez et al., 2012). Self-image congruence has been found to be directly and indirectly related to brand preference, satisfaction and loyalty (Kressmann et al., 2006; Sirgy et al., 1997). Emotional brand attachment is higher when the brand is congruent with the consumer's actual self (Malär et al., 2011). We propose brand self-congruity (BSC) as the perceived

congruence between the brand image presented in the phygital showroom and the consumers' self-concept.

2-5. Purchase enchantment: Enchantment is transforming the boring “something special” – an experience of magic, wonderment, or captivation through marketing and consumption (Hartmann & Brunk, 2019). Sociological accounts have described modern retail venues as ‘cathedrals of consumption’ built to re-enchant increasingly disenchanted consumers (Ritzer, 2010). Prior research has explored exceptional consumption events that elicit awe and immersion (Arnould & Price, 1993) and transformative, flow-like, or peak-like experiences that can change self-brand relationships (Schouten et al., 2007). Enchantment is similar to customer delight in that it is an intense positive reaction to exceeded expectations, but it also encompasses the magic, wonder and transcendence of time and space that are characteristic of hedonic consumption (Holbrook & Hirschman, 1982; Oliver et al., 1997; Chitturi et al., 2008). Therefore, purchase enchantment (PE) is conceptualised as a strong feeling of positivity, wonder and captivation experienced during a purchase episode. Enchantment is key in experiential marketing but has been little quantified, and the role that technology plays in creating it is underexplored (Hartmann & Brunk, 2019).

2-6 Hypotheses development:

2-6-1 Phygital showroom immersion and sensory vividness: Why immersive phygital environments will increase sensory vividness: three reasons. First, we hypothesise that in-store technologies enhance vividness by increasing consumer involvement, imagery and elaboration (Grewal et al., 2020). Second, AR and VR applications enhance the stimulus itself, broadening and deepening the spectrum of senses that compose vividness (Flavián et al., 2019; Steuer, 1992) by overlaying high-resolution, dynamic, and multisensory content atop physical products. For example, AR-based service augmentation presents product information in the customer's field of view, resulting in more explicit and tangible impressions (Hilken et al., 2017). Digital sensory-enabling technologies have the potential to improve the stimulation of multiple senses (Petit et al., 2019). Third, absorbed consumers allocate more attentional resources to the environment. Because vividness is partly a function of attention and elaboration, deeper immersion

should lead to more detailed sensory registration (MacInnis & Price, 1987; Yim et al., 2017). Hence:

H1. *Phygital showroom immersion is positively related to sensory vividness.*

2-6-2. Phygital showroom immersion and brand self-congruity:

Immersion should also improve brand self-congruity. Consumers appropriate immersive experiences as identity resources: entering an experiential context, consumers weave it into their self-narratives (Carù & Cova, 2003; Escalas & Bettman, 2005). Multi-dimensional brand experiences are rich and shape the consumers' associations with brand personality (Brakus et al., 2009). The symbolic profile of the brand is clearer and is more relatable to the self. Marketers have been shown to create transcendent, flow-like experiences that improve consumers' integration with the brand community and their identification with the brand (Schouten et al., 2007). Self-related motives are attractive in immersion shopping experiences, especially in phygital environments, and the adoption of phygital retail formats is associated with self-expressive processes (Lawry, 2022; Pangarkar et al., 2022). Thus, consumers immersed in the brand's staged world should experience more congruence between the presented brands and their self. Hence;

H2. *Phygital showroom immersion is positively related to brand self-congruity.*

2-6-3. Sensory vividness and brand self-congruity: Appraisal and Match yourself and brand with vivid sensory impressions. Rich imagery stimuli may also serve to make brand meanings more concrete and self-relevant (MacInnis & Price, 1987). Vivid depictions may also cause embodied simulations where consumers imagine themselves using the product (Elder & Krishna, 2012). When the presentation is realistic, consumers are more likely to imagine themselves as owners and associate the user image of the brand with themselves (Yim et al., 2017). Improved impressions might lead to judgements of self-congruity which could increase perceived congruence (Sirgy, 1982). However, we note that this is the least direct of the proposed paths, as self-congruity is primarily a symbolic, identity-based appraisal, and does not rely on richness in perception. We propose H3 as a directional expectation to test, rather than an assumption. Hence:

H3. *Sensory vividness is positively related to brand self-congruity.*

2-6-4. Phygital showroom immersion and purchase enchantment:

Immersion is itself a huge source of magic. Absorption is an intrinsic reward and it increases emotional elevation (Csikszentmihalyi 1990, Hoffman & Novak 1996). Exceptional experiences are characterised by absorption and positive emotions (Arnould & Price, 1993). Retailers create grandiose “cathedrals of consumption” in an effort to re-enchant consumers using immersive stage design (Ritzer, 2010). Schouten et al. (2007) found that customers who have a transcendent shopping experience, a flow or peak state, report lasting positive changes in their relationship with the brand. Therefore, we hypothesise that consumers more immersed in the phygital showroom will define a more magical, wonderful and engaging buying episode. Hence:

H4. Phygital showroom immersion is positively related to purchase enchantment.

2-6-5. Sensory vividness and purchase enchantment: Hedonic arousal will charm the sensory vividness. Sensory stimulation is an important path to affective consumer responses (Krishna, 2012), and delight is created when surprising, arousing consumption experiences trigger a cascade of pleasure (Oliver et al., 1997). Delight-type emotions (i.e. excitement and cheerfulness) are mainly driven by hedonic benefits (i.e. rich sensory experience) (Chitturi et al., 2008). Vivid stimuli are intrinsically emotionally interesting (Taylor & Thompson, 1982) and multisensory technological staging enriches experiential intensity in digital and phygital environments (Batat, 2024a; Petit et al., 2019). Thus, consumers who perceive the showroom presentation as vivid and life-like should find the purchase episode to be more wondrous and engaging.1982), Hence:

H5. Sensory vividness is positively related to purchase enchantment.

2-6-6. Brand self-congruity and purchase enchantment: The more the consumer identifies with a consumption object, the more intense will be the emotional response. Consumers are more likely to form emotional bonds with brands that are congruent with their self-image (Malär et al., 2011) and self-image congruence leads to positive evaluations, satisfaction and loyalty (Aguirre-Rodriguez et al., 2012; Kressmann et al., 2006). Escalas & Bettman (2005) and Sirgy et al. (1997) have suggested that brands are often used by consumers to express and confirm their identity and that the purchase of a brand may be a personally relevant, self-expressive event rather than a

simple acquisition. The acquisitions are steeped in emotions and therefore are enchanting compared to routine purchases (Hartmann & Brunk, 2019). So we suggested that the perceived congruity between featured brands and consumers' self-concept would be positive predictors of purchase enchantment.2011), Hence:

H6. Brand self-congruity is positively related to purchase enchantment.

2-6-7. Mediating mechanisms: The S-O-R framework offers a mediation model that encompasses the above arguments. In this model, the stimulus (immersion) is linked to the response (enchantment) by two organismic states (sensory vividness and brand self-congruity). Two indirect routes are expected to run parallel to each other. Immersion increases sensory vividness (H1) that increases enchantment (H5) in the perceptual route. Along the identity path, immersion increases brand self-congruity (H2), which in turn increases enchantment (H6). Moreover, the combination of H1, H3, and H6 indicates a serial path in which immersion first increases sensory vividness, followed by an increase in brand self-congruity, and finally an increase in enchantment. This serial path is based on the least theoretically direct path in the model, the sensory-vividness-to-brand-self-congruity link (H3), and is tentatively proposed. Given the recommendations to test indirect effects in structural equation models (Nitzl et al., 2016; Preacher & Hayes, 2008; Sarstedt et al., 2020), we hypothesize:

H7a. Sensory vividness mediates the relationship between phygital showroom immersion and purchase enchantment.

H7b. Brand self-congruity mediates the relationship between phygital showroom immersion and purchase enchantment.

H7c. Sensory vividness and brand self-congruity serially mediate the relationship between phygital showroom immersion and purchase enchantment.

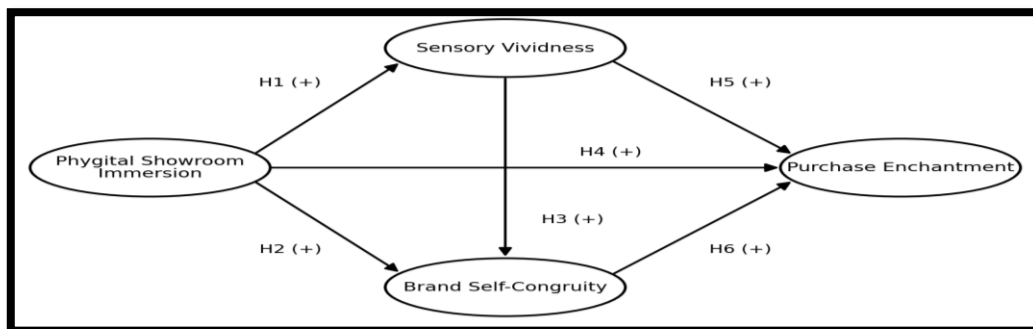


Figure 1 depicts the conceptual model.

3. Methodology

3-1. Research context, sampling, and data collection: Theoretical and practical framework of Iraq. Retailers are investing more in these technologies to make it easier for shoppers to interact with products in stores. The context allows us to study the generalisability of such relationships. The theory of consumer behaviour developed in high-income markets may not transfer directly to emerging markets (Burgess & Steenkamp, 2006; Sheth, 2011). The report looks at the adoption of digital technologies such as AR mirrors and try-on screens, VR product configurators, QR-connected touchscreens and store-connected apps to improve the shopping experience in phygital showrooms in sectors such as electronics, fashion and automotive.

Data were collected using a structured, self-administered survey in a purposive (non-probability) intercept approach. Between September and December 2025, trained enumerators conducted interviews with adult shoppers in phygital showrooms and nearby locations within malls in four of Iraq's largest cities: Baghdad, Erbil, Basra and Mosul. Respondents were filtered by two eligibility criteria: (1) age 18 or older; (2) purchased after visiting a phygital showroom in the last 12 months. The focus was on buying. Respondents were asked to identify their last qualifying purchase and the brands they visited. Participation was anonymous and voluntary. Participants could withdraw at any time, and no identifying information was collected. We sent out 452 questionnaires and removed incomplete and/or badly answered questionnaires, leaving us with 400 usable questionnaires (response rate of 88.5%). The kept data had no missing values. The final sample is shown in Table 1. The respondents were 54.3% male and 45.8% female. The majority of respondents are young Iraqis aged 18-34 years (68.3 per cent). Bachelor's degree: 60.0% of participants in low-, middle- and high-income groups (42.8%, 44.5% and 12.8%, respectively). The latest phygital showrooms of the respondents were mostly from electronics (41.5%), fashion (38.0%) and automotive (20.5%), and mostly from Baghdad (50.3%), followed by Erbil (21.3%), Basra (17.0%) and Mosul (11.5%). 37.3% of respondents know about AR/VR. The sample size is sufficient for the PLS-SEM. A G Power analysis (Faul et al., 2009) for a regression model with 3 predictors ($f^2 = .15$, $\alpha = .05$, power = .95) showed that a minimum sample size of 119 cases is needed (Kock & Hadaya, 2018),

so $n = 275$ is sufficient to estimate a path coefficient of at least 15. Non-response bias was examined (Armstrong and Overton, 1977) comparing the four constructs between early (quartile 1) and late respondents (quartile 4). There were no significant differences (all $|t| \leq 1.42$, all $p_s > 0.157$). The sample was purposive and geographically concentrated in Baghdad. Caution should be exercised in generalising (see section 5.4).

Table (1): Respondent profile ($n = 400$).

Characteristic	Category	Frequency	%
Gender	Male	217	54.3
	Female	183	45.8
Age (years)	18–24	134	33.5
	25–34	139	34.8
	35–44	80	20.0
	45 and above	47	11.8
Education	High school	82	20.5
	Bachelor's degree	240	60.0
	Master's degree	48	12.0
	Doctorate	30	7.5
Monthly income (IQD)	Low ($< 750,000$)	171	42.8
	Medium ($750,000–1,500,000$)	178	44.5
	High ($> 1,500,000$)	51	12.8
City	Baghdad	201	50.3
	Erbil	85	21.3
	Basra	68	17.0
	Mosul	46	11.5
Showroom type	Electronics	166	41.5
	Fashion	152	38.0
	Automotive	82	20.5
Prior AR/VR experience	Yes	149	37.3
	No	251	62.8
Showroom visits (past six months)	None (qualifying purchase occurred earlier)	96	24.0
	1–2 times	183	45.8
	3–5 times	83	20.8
	More than 5 times	38	9.5

Note: IQD = Iraqi dinar; AR/VR = augmented reality/virtual reality.

3-2. Measures: All constructs were measured with multi-item 7-point Likert scales (1 = strongly disagree; 7 = strongly agree) adapted from previous research. Moreover, the immersion in the phygital showroom (5 items) was

adapted from the immersion and engagement scales of studies on immersive technology (Hudson et al., 2019; Mollen & Wilson, 2010; Yim et al., 2017) for measuring absorption in the blended physical-digital showroom. Sensory Vividness (4 items) was adapted from vividness measures in AR commerce (Yim et al., 2017; see Appendix A). The scale was based on the depth/breadth conceptualisation of vividness (Steuer, 1992). The brand self-congruence scale was adapted from the direct and global measure by Sirgy et al. (1997). 4.5 Buy Enchants: The episode of purchase was conceptualised, based on conceptual accounts of enchantment as wonder, magic and captivation (Arnould and Price, 1993; Hartmann and Brunk, 2019) and the affective structure of delight (Oliver et al., 1997). Items were worded as in Table 2. Other references: content validity was evaluated in phases. multiscale. The questionnaire was developed in English, translated into Arabic, and back translated independently by bilingual academics (Brislin, 1970). The committee fell apart. Some word changes were made after we pretested the items on 30 consumers. strange in character but strong in experience in the categories but the language of the items was too general and could be used for many categories. Sec. 5.4 The sample was enriched by merging answers from shops in electronics, fashion and automobiles.

3-3. Common method bias: All measures were collected from a single informant at one point in time, and we employed several procedural and statistical remedies to address common method variance (Fuller et al., 2016; MacKenzie & Podsakoff, 2012; Podsakoff et al., 2003). Respondents were guaranteed anonymity of procedures. To minimise evaluation apprehension and consistency motifs, different blocks and different anchor points were used in the questionnaire. Harman's single factor test indicated that the first unrotated factor explained 47.86% of the variance, which was less than the 50% threshold (Kock, 2015). The full collinearity test indicated variance inflation factors (VIFs) ranging from 1.265 to 1.716, below the threshold of 3.3 (Kock, 2015). Together the results suggest that large parts of the findings are unlikely to be accounted for by common method variance, but it cannot be ruled out completely.

3-4. Analytical strategy: The model was estimated through variance-based PLS-SEM using SmartPLS 4.0 (Ringle et al., 2024). PLS-SEM is suitable in this context, as the research is predictive and theory-building, includes several mediators, and estimates a complex mediation model within a single

system (Hair et al., 2019; Sarstedt et al., 2020). The PLS algorithm was based on a path weighting. Statistical significance testing was conducted using bootstrapping (5,000 subsamples) with percentile confidence intervals and two-tailed tests at $\alpha = .05$ (Hair et al., 2022; Preacher & Hayes, 2008). The predictive relevance was assessed with the blindfolding procedure (Omission distance = 7; Geisser, 1974; Stone, 1974). Hypotheses H7a-H7c were tested with indirect effects specific to the mediator (Nitzl et al., 2016).

4. Results

4-1. Descriptive statistics: The constructs were rated using 7-point scales in the positive range at the moderate level (i.e., phygital showroom immersion ($M = 4.02$, $SD = 0.85$), sensory vividness ($M = 4.17$, $SD = 0.82$), brand self-congruity ($M = 3.96$, $SD = 0.97$) and purchase enchantment ($M = 4.59$, $SD = 0.92$). Skewness -0.19 0.15 Excess Kurtosis - 0.43 - 0.16 Inference was carried out using bootstrap-based inference. It has not exhibited any serious deviations from normality (Hair et al., 2021).

4-2. Measurement model assessment: Indicator reliability, internal consistency, convergent validity and discriminant validity were tested by the reflective measurement model (Hair et al., 2019). (Table 2) the standard external loads varied from 0.952 to 0.968. All the indicators are higher than the cut-off value of 0.708. Internal consistency was assessed using Cronbach's alpha (0.970–0.978), Dijkstra–Henseler's ρ_A (0.971–0.979) and composite reliability ρ_C (0.978–0.983). The values are above 0.95, indicating the problem of item redundancies (Hair et al., 2019). All the items were kept and worded to assess a narrow facet of their construct. This is discussed in the limitations (Section 5.4). The AVE values ranged from 0.918 to 0.931 (Fornell & Larcker, 1981), which indicates that the convergent validity was good (>0.50). Figure 2. Measurement model.

Table (2): Measurement items, indicator reliability, and construct-level statistics.

Code	Item	Loading	M	SD
Phygital showroom immersion ($\alpha = 0.978$; $\rho_A = 0.979$; $\rho_C = 0.983$; AVE = 0.920)				
PSI1	While in the showroom, I felt completely absorbed in the blended physical–digital environment.	0.966	4.03	0.88

Code	Item	Loading	M	SD
PSI2	The showroom's digital features (e.g., interactive screens, AR/VR displays) made me lose track of my surroundings.	0.958	4.00	0.89
PSI3	I felt deeply engaged as I moved between the physical products and their digital presentations.	0.956	4.04	0.89
PSI4	The showroom experience captured my full attention.	0.958	4.02	0.89
PSI5	I felt immersed in the showroom experience rather than merely observing it.	0.958	4.00	0.88
Sensory vividness ($\alpha = 0.970$; $\rho A = 0.971$; $\rho C = 0.978$; AVE = 0.919)				
SV1	The showroom presented products in a vivid and lifelike way.	0.960	4.17	0.85
SV2	The digital displays made product details appear clear and sharp to my senses.	0.959	4.16	0.87
SV3	The presentation of products stimulated multiple senses (e.g., sight, sound, touch).	0.958	4.17	0.87
SV4	I could form a rich, detailed mental image of how the products would look and feel in real life.	0.957	4.18	0.84
Brand self-congruity ($\alpha = 0.975$; $\rho A = 0.975$; $\rho C = 0.982$; AVE = 0.931)				
BSC1	The image of the brands showcased in this showroom is consistent with how I see myself.	0.963	3.95	1.00
BSC2	The brands presented in this showroom reflect who I am.	0.968	3.96	1.02
BSC3	People similar to me shop for the brands featured in this showroom.	0.962	3.98	1.02
BSC4	The personality of the showcased brands mirrors my own personality.	0.967	3.95	1.01

Code	Item	Loading	M	SD
Purchase enchantment ($\alpha = 0.978$; $\rho_A = 0.978$; $\rho_C = 0.982$; AVE = 0.918)				
PE1	The purchase experience at this showroom felt magical.	0.960	4.58	0.96
PE2	Buying at this showroom filled me with a sense of wonder.	0.957	4.58	0.95
PE3	The purchase experience was captivating beyond my expectations.	0.959	4.60	0.95
PE4	I felt a special excitement, as if the purchase were an extraordinary event.	0.952	4.59	0.96
PE5	The experience of purchasing here enchanted me.	0.962	4.62	0.97

Note: All items were measured on seven-point Likert scales (1 = strongly disagree, 7 = strongly agree). All loadings are significant at $p < 0.001$. α = Cronbach's alpha; ρ_A = Dijkstra–Henseler's reliability coefficient; ρ_C = composite reliability; AVE = average variance extracted; M = mean; SD = standard deviation.

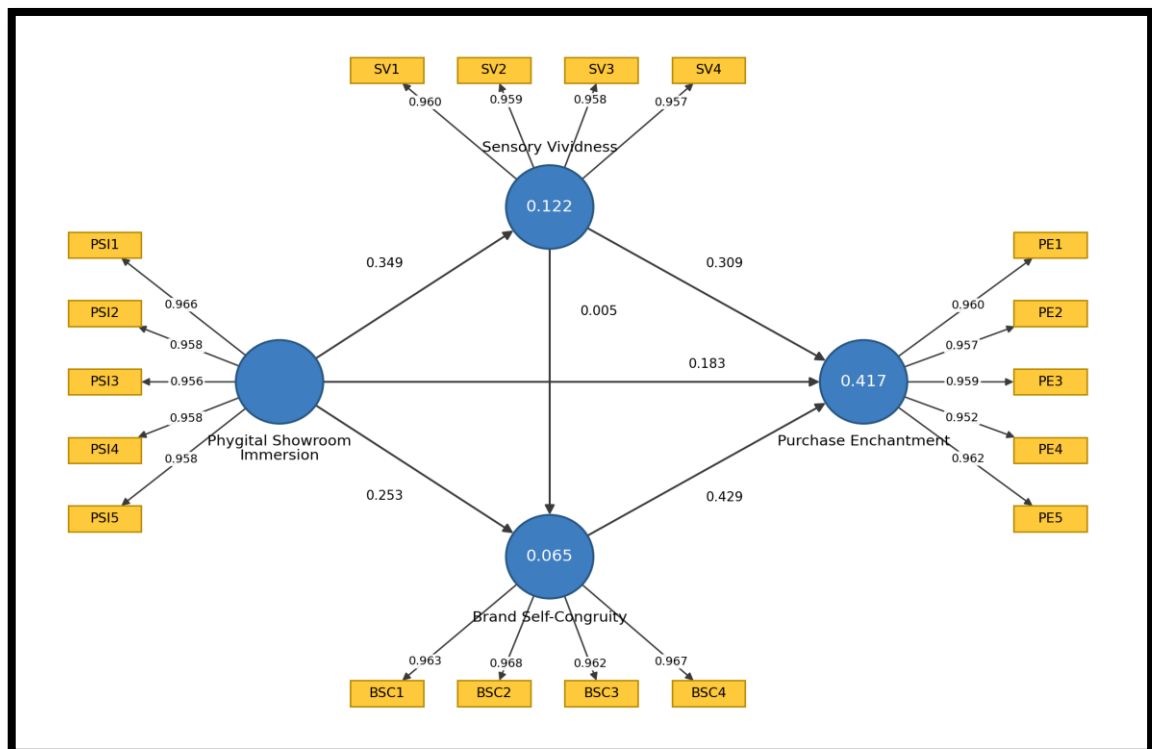


Figure (2): Measurement model results (PLS-SEM algorithm, SmartPLS 4.0).

Discriminant validity was assessed in two ways. The first step was the Fornell–Larcker criterion, where the square root of the AVE of each construct (0.958–0.965) was greater than its correlations with all other constructs (Table 3) (Fornell & Larcker, 1981). Second, the HTMT (Heterotrait-Monotrait) ratios for all constructs ranged from 0.096 to 0.517, which are well below the conservative cut-off of 0.85 (Table 4) (Henseler et al., 2015). The constructs are separable empirically.

Table (3): Discriminant validity: Fornell–Larcker criterion

Construct	1	2	3	4
1. Phygital showroom immersion	0.959			
2. Sensory vividness	0.349	0.959		
3. Brand self-congruity	0.255	0.094	0.965	
4. Purchase enchantment	0.400	0.413	0.505	0.958

Note: Bold diagonal elements are the square roots of the AVE; off-diagonal elements are construct correlations.

Table (4): Discriminant validity: heterotrait–monotrait (HTMT) ratios

Construct	1	2	3	4
1. Phygital showroom immersion				
2. Sensory vividness	0.358			
3. Brand self-congruity	0.260	0.096		
4. Purchase enchantment	0.409	0.423	0.517	

Note: All HTMT values are below the conservative 0.85 threshold (Henseler et al., 2015).

4-3. Structural model assessment: The lateral collinearity was examined and the path estimates interpreted. It was found that the VIF values of all the inner relationships were between 1.000 and 1.207, which is far below the threshold value of 3, indicating that there was no problem of collinearity (Hair et al., 2019). The SRMR was 0.017, below the cut-off of 0.08 (Henseler et al., 2016; Hu & Bentler, 1999), indicating a good fit of the model to the data. The model explained 41.7% of the variance of purchase enchantment ($R^2 = 0.417$, adjusted $R^2 = 0.413$), 12.2% of the variance of sensory vividness ($R^2 = 0.122$) and 6.5% of the variance of brand self-congruity ($R^2 = 0.065$). Using the blindfolding procedure, we obtained Q2 values of 0.379, 0.111 and 0.059 for PE, SV and BSC, respectively, which are positive and thus indicate predictive

relevance (Geisser, 1974; Stone, 1974). Fig. 3 and Table 5 show the hypothesis tests. The immersion in the phygital showroom is positively and significantly related to sensory vividness ($\beta=0.349$, $t=7.614$, $p<0.001$, 95% CI [0.256, 0.436], $f^2=0.139$) and brand self-congruity ($\beta=0.253$, $t=5.199$, $p<0.001$, 95% CI [0.155, 0.346], $f^2=0.060$); hence, H1 and H2 are supported. Interestingly, sensory vividness was not significantly associated with brand self-congruity ($\beta = 0.005$, $t = 0.105$, $p = .917$, 95% CI [-0.094, 0.104], $f^2 = 0.000$). Thus, H3 was not supported. H4: Phygital showroom immersion was positively and significantly related to purchase enchantment ($\beta = 0.183$, $t = 4.536$, $p = .001$, 95% CI [0.104, 0.261], $f^2 = 0.048$). Sensory vividness ($\beta = 0.309$, $t = 8.401$, $p < .001$, 95% CI [0.237, 0.381], $f^2 = 0.144$) and brand self-congruity ($\beta = 0.429$, $t = 11.441$, $p < .001$, 95% CI [0.354, 0.501], $f^2 = 0.296$) were significant positive predictors of purchase enchantment, supporting H5 and H6, respectively. Brand self-congruity was the strongest predictor of enchantment.

Table (5): Structural model results: direct effects

Hyp.	Path	β	t-value	p-value	95% CI	f^2	Decision
H1	PSI $\rightarrow$ SV	0.349	7.614	< 0.001	[0.256, 0.436]	0.139	Supported
H2	PSI $\rightarrow$ BSC	0.253	5.199	< 0.001	[0.155, 0.346]	0.060	Supported
H3	SV $\rightarrow$ BSC	0.005	0.105	0.917	[-0.094, 0.104]	0.000	Not supported
H4	PSI $\rightarrow$ PE	0.183	4.536	< 0.001	[0.104, 0.261]	0.048	Supported
H5	SV $\rightarrow$ PE	0.309	8.401	< 0.001	[0.237, 0.381]	0.144	Supported
H6	BSC $\rightarrow$ PE	0.429	11.441	< 0.001	[0.354, 0.501]	0.296	Supported

Note: PSI = phygital showroom immersion; SV = sensory vividness; BSC = brand self-congruity; PE = purchase enchantment. Bootstrapping with 5,000 subsamples; percentile confidence intervals (CI); two-tailed tests.

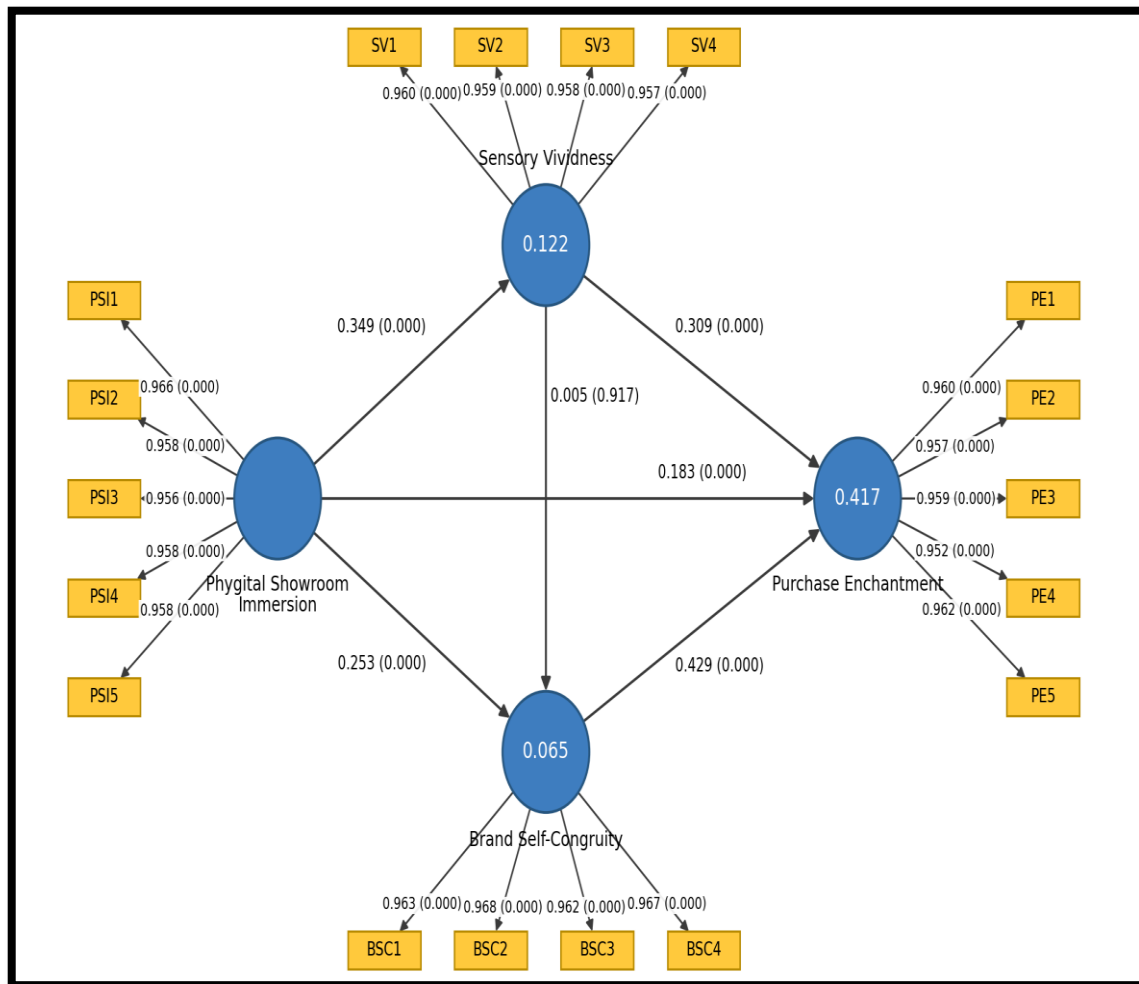


Figure 3. Structural model results with path coefficients and p-values (bootstrapping, 5,000 subsamples, SmartPLS 4.0).

4-4. Mediation analysis: Bootstrap procedures (Nitzl et al., 2016; Preacher & Hayes, 2008) were employed to test the mediating hypotheses with specific indirect effects. As can be seen in Table 6, the indirect path through sensory vividness was significantly different from zero ($\beta = 0.108$, $t = 5.445$, $p < .001$, 95% CI [0.072, 0.149]), supporting H7a. Further, the indirect path via brand self-congruity was significant ($\beta = 0.109$, $t = 4.704$, $p < .001$, 95% CI [0.065, 0.154]), supporting H7b. The same signs of the indirect paths persisted, suggesting the partial mediation was complementary (Zhao et al., 2010). There was the direct way, diving into enchantment. However, the serial indirect effect through sensory vividness and brand self-congruence was not significantly different from zero ($\beta = 0.001$, $t = 0.104$, $p = .917$, 95% CI [-0.014, 0.016]). Therefore, H7c was not supported. The total indirect effect of immersion ($\beta = 0.217$, $t = 7.880$, $p < .001$) accounted for about

54.3% of the total effect of immersion on enchantment ($\beta = 0.400$, $t = 9.500$, $p < .001$). The results showed that a significant part of the association between immersion and enchantment was statistically mediated by the two parallel organismic pathways. As with the cross-sectional design, this decomposition is for statistical mediation, not demonstrated temporal or causal order.

Table (6): Mediation analysis: specific indirect, total indirect, direct, and total effects

Hyp.	Effect	β	t-value	p-value	95% CI	Decision
H7a	PSI $\rightarrow$ SV $\rightarrow$ PE	0.108	5.445	< 0.001	[0.072, 0.149]	Supported (complementary partial mediation)
H7b	PSI $\rightarrow$ BSC $\rightarrow$ PE	0.108	4.663	< 0.001	[0.064, 0.154]	Supported (complementary partial mediation)
H7c	PSI $\rightarrow$ SV $\rightarrow$ BSC $\rightarrow$ PE	0.001	0.104	0.917	[-0.014, 0.016]	Not supported
—	Total indirect effect (PSI $\rightarrow$ PE)	0.217	7.880	< 0.001	[0.163, 0.271]	—
—	Direct effect (PSI $\rightarrow$ PE)	0.183	4.536	< 0.001	[0.104, 0.261]	—
—	Total effect (PSI $\rightarrow$ PE)	0.400	9.500	< 0.001	[0.318, 0.479]	—

Note: Mediation classification follows Zhao et al. (2010). Bootstrapping with 5,000 subsamples; percentile confidence intervals (CI).

4-5. Importance–performance map analysis: To quantify the relationships between the constructs, a structural model was estimated, and an importance-performance map analysis (IPMA) was performed to translate the structural estimates to managerial priorities with the purchase enchantment as the target construct (Ringle & Sarstedt, 2016). Performance was calculated from unstandardised total effects, and scores were rescaled to a range of 0-100 to derive importance (Table 7; Figure 4). The most important was the immersion in the phygital showroom (0.432; performance = 50.29), followed by brand self-congruity (0.404; performance = 49.31) and sensory vividness (0.347; performance = 52.82). The importance of brand self-congruity is very high but poorly executed. It is thus the most attractive lever to improve:

a gain of 0.40 point in the enchantment performance is associated with a gain of one point in its performance on a scale of 0-100, *ceteris paribus*.

Table (7): Importance–performance map analysis (target construct: purchase enchantment).

Construct	Importance (total effect)	Performance
Phygital showroom immersion	0.432	50.29
Sensory vividness	0.347	52.82
Brand self-congruity	0.404	49.31

Note: Importance values are unstandardized total effects on purchase enchantment; performance values are construct scores rescaled to 0–100. Performance of purchase enchantment = 59.87.

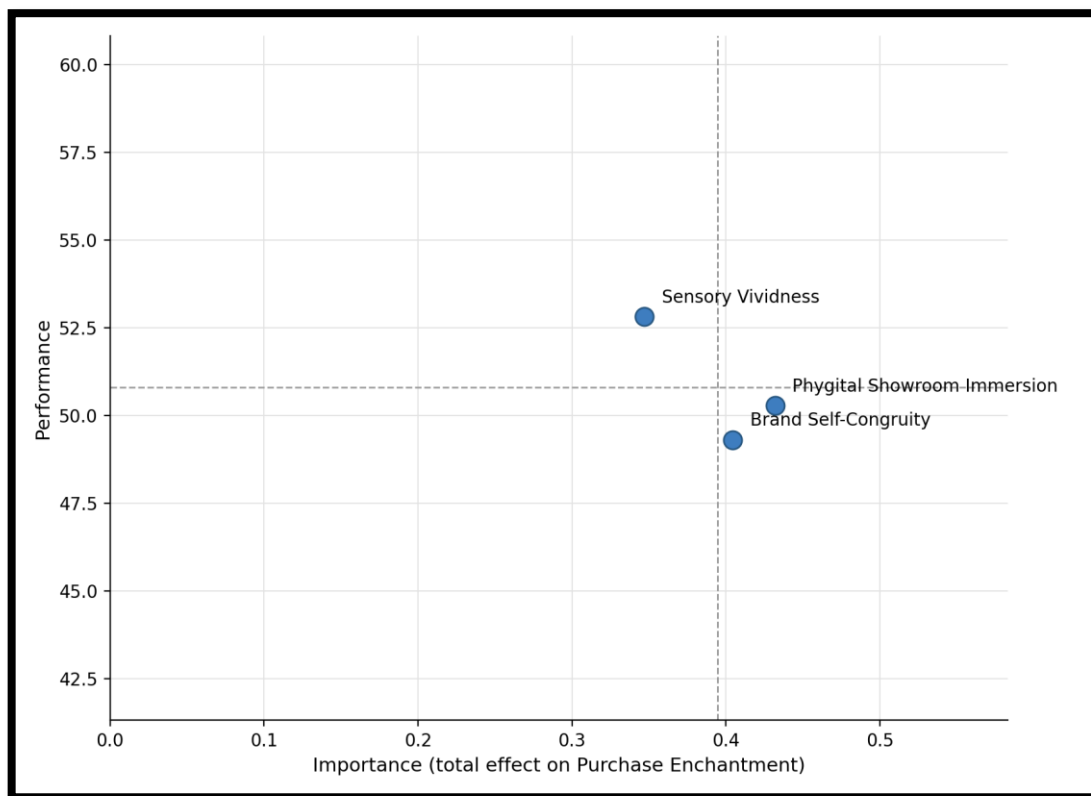


Figure (4): Importance–performance map (target construct: purchase enchantment).

5. Discussion

5-1. Discussion of findings: The research aims to investigate the effect of purchase incentive on the phygital showroom immersion of Iraqi consumers and the mediating function of sensory vividness and brand self-congruity. That means four different scenarios. The research found that immersion was

a positive experience enhancer and was associated with sensory clarity, brand self-congruence and purchase enticement. The overall effect of the relationship with allure ($=0.400$) was split into a direct ($=0.183$) and an indirect ($=0.217$) effect, confirming the two organismic pathways as the major channels of transmission. Two ways in which immersion increased the desirability of the goods. It improved the product's image. It connected the brands on show to the self-image of the consumer. The two indirect pathways were large, sequential, and not parallel, as expected with H3 and H7c. There was no significant association between brand self-congruity and sensory vividness ($\beta = .005$, $r = .094$). One way to interpret this is that the abundance of sensory input supports perceptual processing and becomes self-relevant through brand self-relevance. The data do not lend support to such a reading here. Reading a brand's symbols and narratives is an act of self-alignment (Elder & Krishna, 2012; MacInnis & Price, 1987; Sirgy, 1982). We already had little confidence in this null result (Section 2.6.3), and it is not inconsistent with imagery-based theories of self-referencing, but it constrains how far they can stretch.

Enchantment was most strongly predicted by brand self-congruity ($\beta = 0.429$, $f^2 = 0.296$). Thus, this is in line with the theory of brands that connect with consumers and induce more emotional response (Malär et al., 2011). This is a quick-react and identity statement.

5-2. Theoretical implications: The findings contribute to theory in four ways. First, they contribute to the body of work on phygital customer experience, which has been mainly conceptual and qualitative (Batat, 2024b; Mele & Russo-Spena, 2022; Pangarkar et al., 2022). The current study contributes to measurement and model testing in the field by conceptualising phygital showroom immersion as a one-dimensional store-level construct and linking it to downstream emotional value. Second, it empirically tests a dual-organism model, contributing to the S-O-R theory of technology-intensive retailing. The two routes, sensory-vividness and brand-self congruence, are orthogonal and independent. Thus, phygital environments seem to activate two different internal systems: perceptual and identity-based. This is consistent with the experiential view of consumption (Babin et al., 1994; Holbrook & Hirschman, 1982). Third, it links interpretive studies of enchantment (Arnould & Price, 1993; Ritzer, 2010; Schouten et al., 2007) and quantitative modelling by operationalising and measuring

purchase enchantment and its drivers. Satisfaction or intentions are not affective positioning outcomes (e.g., delight, enchantment with and beyond delight, Chitturi et al., 2008; Oliver et al., 1997). Fourth, it contributes to the body of knowledge on experiential retail in a developing economy. The results from Iraq appear to support the idea that experiential theories are portable (Burgess & Steenkamp, 2006; Sheth, 2011). Because identity and enchantment are closely related, identity mechanisms could be especially pertinent in such contexts and need to be empirically tested across cultures.

5-3. Managerial implications: The outcomes of the design guidelines are very relevant to suppliers, shopping centre owners and brand executives in Iraq and other Middle Eastern countries. The IPMA is a model of immersion. This implies that managers should see the showroom as a whole physical space and not just a retail space with integrated online services. Interactive shelf displays, augmented reality mirrors and dressing rooms, and virtual reality configurators in important areas such as the automotive industry, as well as QR and app-integrated connections between the retail space and the consumer's device for easy navigation (Bell et al., 2018; Grewal et al., 2020). The people in the trenches have to be trained on how to interact with the technology, how to navigate it, and how to pull away from it so as to keep the focus that is critical to effectiveness.

The two courses are very different. The perceptual framework also includes sensory richness, such as real product displays, dynamic and flowing images, and multimodal cues (auditory, visual, and tactile aspects). One possible cause is its liveliness (Batat, 2024a; Krishna, 2012; Petit et al., 2019). The area of the IPMA that most needs improvement is identification, given the importance of self-brand fit and poor performance. In this domain, the development of self-brand resonance should encompass culturally pertinent stories and cues, tailored digital content, augmented reality experiences to aid consumer identification with the brand, and community projects to assist customers in finding "people like me" within the company. The major outcome is not contentment but intrigue (Hartmann & Brunk, 2019; Oliver et al., 1997). So managers need to control engagement inside their customer experience measures. A good showroom delivers extraordinary experiences and attractive benefits such as surprising

unveilings, incredible celebrations upon purchase and well-planned surprises.

5-4 Limitations and future research: However, these findings are limited and open for additional research. The cross-sectional design limits early causal conclusions. Statistics indicate relationships consistent with the S-O-R paradigm and no measurable effects. Longitudinal studies of enchantment and experimental manipulations of immersion may give additional causal and temporal evidence. An intentional non-probability intercept sampling strategy was used to study the sample, which was dominated by Baghdad (50.3%) and under-represented in Mosul (11.5%). Caution should thus be used when generalising about the Iraqi or Arab customer group as a whole. A comparative study using a probability-based, geographically diverse sample might be done on less developed nations. This would highlight border difficulties (Sheth, 2011). These include electronics, clothes and car retail firms. It was an enormous range of senses and absorption. There is a lot of industry but not a unified approach to it. Each subject has several patterns. Future research should address measurement invariance and structural linkages over an even broader variety of categories. Fourth, all parameters were measured at the same time point from the person. However, even if the procedural and statistical treatment is effective, the bias of the standard procedures cannot be totally removed (Kock, 2015; Podsakoff et al., 2003). Further investigation might also incorporate behavioural outcomes (e.g. real transactions or customer loyalty). Fifth, the very high reliabilities (α and $\rho_C > 0.95$) and consistently high loadings suggest semantic redundancy among the items. The scales have their own buy enchantment stat to adjust and check for dupes and test on many languages. Six, enchantment, richness of the senses and immersion are all related ideas. Evidence for convergent and discriminant validity is provided (Section 4.2), but further research is needed to clarify the conceptual distinctions between the constructs, especially between sensory vividness (richness of stimulus) and mental imagery (internal representation), and between immersion (absorption) and engagement (motivated interaction). Seventh, enchantment in principle in the S-O-R paradigm may be seen as an effect rather than an organismic state. Other problems, such as enchantment as an organismic state controlling future conduct, could require greater research. The model does not include any moderators such as age, technological competence, level of interest in

the place, or past experience with AR/VR overall. This should be greater comprehension of the conditions and the individuals for whom physical immersion is required at the end of the day.

- 6. Conclusion:** Phygital stores are fascinating connections between physical items and digital worlds. The research follows the S-O-R paradigm and uses survey data collected from 400 Iraqi consumers. The results of the study reveal that there is a positive relationship between being in these showrooms with purchase joy, both directly and via the two parallel paths of strong sensory impressions and brand congruence. The identification path was the most preferred alternative, but the intended serial method was not well appreciated. The study does not give any new theoretical bases. Based on research into experiential and phygital shopping, it crucially provides quantitative evidence of purchase involvement from an overlooked market. Here, managers have well-defined priorities: to create seamless immersive experiences, to invest on extravagant sensory representations, and, above all, to help customers relate to the brands on display. Because of the cross-sectional and non-probabilistic nature of the data, these claims should be seen as recommendations for practice and further study rather than established causal theories.

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