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MARKET FORCES

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

Determining the Factors Affecting Online Buying Behavior from the Perspective of Motivated Consumer Innovation: The Case of Electronic Goods Industry

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Abstract

Consumer online behavior is a complex and multifaceted phenomenon. It encompasses various aspects, including how individuals interact on digital platforms, websites, and online marketplaces. Social media platforms have emerged as key influencers, shaping consumer purchasing decisions and preferences. Functional, hedonic, socially conscious, altruistic, and cognitive innovations are crucial in today's consumer landscape. They enhance consumer experiences, foster loyalty, promote responsible consumption, and encourage prosocial behavior. Moreover, they promote informed decision-making and shape the future of consumerism. We have focused on Türkiye as it significantly contributes to GDP and employment generation. The study examined the impact of functional innovation on consumer online behavior.

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The impact of functional innovation on consumer's skeptical, indecisive, conscious, and investigative behavior. The impact of hedonic, social, altruistic, and cognitive innovations on consumer online buying behavior. Our results support all the proposed hypotheses. The findings aligned with the past studies.

Keywords: *Online purchase, consumer behavior, functional innovation, hedonic, socially conscious, altruism, and cognitive innovativeness.*

Introduction

Türkiye's electronic industry contributes significantly towards employment generation and GDP (Özgüner et al., 2023). It has 2000 manufacturing companies, which employ more than 30,000 people (Teker et al., 2024). Given its importance, many international firms have established manufacturing units in Türkiye (Gurcam, 2023), including Microsoft, Intel, and General Electric (Demiryol & Soyaltin-Colella, 2024). Türkiye's consumer electronics segment is important to its economy. According to an estimate, its size is about USD 4.4 billion (Şarlıoğlu et al., 2023). In addition, the telecommunications and computer sectors also contribute to the GDP (Çelebi, 2023). Some well-known electronics companies in Türkiye are "Arcelik" and "Vestel." They are the largest exporters of electronics goods to Europe and other countries (Gurbuz & Tuncer, 2023). Moreover, the wearable electronic segment in Türkiye is expected to grow rapidly due to innovation and increasing health awareness (Yıldız et al., 2023). Like other countries, the electronics industry in Türkiye faces challenges such as rising production costs due to increased material and labor costs (Özgüner et al., 2023). Despite these challenges, researchers believe that Türkiye's electronic industry will grow. Some factors that may contribute to its growth are its strategic location, innovative technologies, and a favorable business environment (Teker et al., 2024).

The popularity of e-commerce has revolutionized how consumers interact with businesses (Ho Nguyen et al., 2024). Businesses realize its importance and have invested their resources in e-commerce (Hanaysha, 2022). Wakahia and Owoche (2024) assert that businesses can develop targeted marketing strategies by focusing on online consumers (Steinfeld & Lev-On, 2024). From consumers' perspective, online buying behavior is vital in shaping their shopping experience (Wakahia & Owoche, 2024). Online buying allows consumers to shop freely and easily anywhere (Nodirovna & Sharifogli, 2024). Moreover, online buying allows consumers to compare prices and read online reviews before making decisions (Young et al., 2022). Furthermore, it empowers consumers to control their shopping experience (Ho Nguyen et al., 2024). While shopping online, consumers can avoid physical store crowds and lengthy checkout lines (Wakahia & Owoche, 2024). It also allows consumers to buy products from the global market if unavailable locally

(Nodirovna & Sharifogli, 2024). Besides other benefits, online buying allows consumers to track orders, receive real-time updates, and engage with the customer's support (Steinfeld & Lev-On, 2024). Compared to past studies, we have examined:

1. *How does functional innovation affect consumer online buying- behavior?*
2. *How does functional innovation affect skeptical, indecisive, conscious, and investigative consumers' online buying behavior?*
3. *How do hedonic, social, altruistic, and cognitive innovations affect consumer online buying behavior?*

Literature Review

Online Buying Behavior

The number of online or e-commerce firms has been increasing worldwide. As a result, online buying behavior has also increased profoundly (García-Salirrosas, 2022). Consumers purchase online through a computer-based interface that connects them with virtual shops. It lets consumers interact with the seller digitally (Ho Nguyen et al., 2024). High-end smartphones have made it convenient for consumers to do online shopping (García-Salirrosas, 2022). Moreover, easy access to the internet has also increased online shopping significantly. Consumers can browse the relevant vendors' websites and make purchases effortlessly. Young people, in particular, constitute the majority of online shoppers, as they have been accustomed to technology since birth (Wakahia & Owoche, 2024). Furthermore, the growth of social networking and online sales sites has also promoted consumer's online buying behavior (Arifin et al., 2022). Furthermore, The COVID-19 outbreak has also increased online purchases (Young et al., 2022).

Factors affecting online buying behavior include attitude toward online shopping (Hoo et al., 2024), special circumstances (Hidayat & Annas, 2024), knowledge about the store, and purchase intentions (Martínez-Navalón et al., 2023). In addition, the image and trust of online vendors also affect online purchasing. Researchers believe male and female perceptions of online shopping are different. Males prefer to shop online because it is convenient and saves time. On the other hand, females prefer shopping in physical shops because they want to see and touch the products before purchasing (Arifin et al., 2022).

Dimensions of Online Buying Behavior

Skeptical Consumer

Skeptical consumers approach purchasing decisions with a critical and questioning mindset (Cicciù & Carmona, 2024). They are cautious and hesitant to trust marketing claims, advertisements, and sales pitches (Shamsi & Abad, 2024). Such consumers analyze information carefully and evaluate the evidence before deciding (Jamil et al., 2024). Skeptical consumers are also wary of exaggerated or misleading advertising and sales tactics, seeking independent reviews, ratings, and recommendations to validate product claims (Arifin et al., 2022). Their need for verification is driven by a desire to make informed decisions (Londaridze, 2024). As a result, marketers must adopt strategies that address these concerns, such as transparency, social proof, and independent verification, to build trust and credibility with skeptical consumers (Cicciù & Carmona, 2024).

Indecisive Buying Behaviour

Indecisive buyers do not make timely decisions, often leading to confusion and mixed opportunities (Altinkan & Armağan, 2024). Such buyers struggle to consider different options and spend too much time analyzing them. As a result, they often make wrong decisions (Lolo & Nurdiansyah, 2023). Besides seeking excessive input for validation, indecisive consumers frequently change their minds and avoid making decisions (Sanyal et al., 2021). Moreover, such consumers have low confidence and decision-making power. Therefore, they significantly depend on others' advice to validate the decisions they are about to make (Appel et al., 2024). Furthermore, such consumers suffer from increased stress, anxiety, and decreased productivity. Researchers have recommended several remedies for indecisive consumers (Lolo, Nurdiansyah, 2023). This includes practicing self-reflection and self-awareness, developing decision-making skills, and building confidence (Altinkan & Armağan, 2024). Thus, we argue that by addressing these issues, such individuals can enhance their decision-making (Lolo & Nurdiansyah, 2023).

Conscious Buying Behaviour

Conscious buyers, while purchasing, focus on the products that have the least adverse effect on the environment (Duque-Oliva et al., 2024). They ensure that the values of companies align with their social values. Moreover, they purchase products whose packaging is environment-friendly. Furthermore, they like firms that focus on corporate social responsibilities (Siddiqui et al., 2023). They choose products with minimal waste and sustainable materials and avoid impulse purchases (Kumar et al., 2022). Conscious buyers also read labels to ensure the material and packaging are environmentally friendly (Duque-Oliva et al., 2024).

Investigative Behaviour

Investigative consumers exhibit distinct online behavior characterized by extensive research, analysis, and evaluation before purchasing (Nurjaman, 2024). These consumers engage in thorough online research, scrutinizing product features, prices, and reviews to ensure they make an informed decision (Anderson et al., 2022). They often visit multiple websites, compare products, and seek expert opinions to validate their choices (Kaynak et al., 2023). Investigative consumers also tend to be more discerning, evaluating options and considering factors beyond price, such as quality, durability, and customer support (Alhalalmeh et al., 2024).

Types of Innovation

Functional Innovation

Functional innovation is developing new or improved products, services, or processes that enhance functionality, performance, or user experience (Akter et al., 2023). It improves the functional aspects of a product, service, or process by using new technologies and materials (Miller et al., 2023). Researchers believe functional innovation improves performance and reduces cost significantly (Liu et al. (2024). Additionally, it helps firms differentiate themselves from competitors and establish a leadership position in their market (Khalf & Ali, 2024).

Akter et al. (2023) assert that smartphones and electric vehicles have stemmed from functional Innovation. Many companies have successfully implemented hedonic innovation and reaped significant rewards (Akter et al., 2023). Luxury car brands like Ferrari and Porsche have created a sense of exclusivity and prestige. As a result, they command high prices and inspire customer loyalty (Srivastava & Menon, 2022). Similarly, Disney and Universal have developed immersive entertainment experiences that provide hedonic pleasure and emotional connections, resulting in repeat business and positive word-of-mouth. Thus, we argue that by focusing on hedonic innovation, companies can create unique and memorable experiences that drive customer loyalty and advocacy (Hu et al., 2021).

Hedonic Innovation

Hedonic innovation refers to developing new products, services, or experiences that provide customers pleasure, enjoyment, or entertainment (Khalf & Ali, 2024). Helmi et al. (2023) assert that this type of innovation focuses on creating emotional connections with customers, often by tapping into their desires, passions, or interests. Hedonic innovation can manifest in various ways, such as sensory experiences, emotional connections, entertainment, luxury, and exclusivity (Akter et al., 2023). Khalf and Ali

(2024) assert that virtual reality experiences and gourmet food and beverages are examples of hedonic innovation.

Hedonic innovation has numerous benefits (Zhao et al., 2024). For example, it creates strong emotional connections with customers, leading to brand loyalty and advocacy. Moreover, hedonic innovation helps companies differentiate themselves from competitors and establish a unique market position (Akter et al., 2023). Furthermore, hedonic innovation can justify premium pricing, as customers are willing to pay more for products or services that provide unique emotional experiences (Helmi et al., 2023). Thus, we argue that hedonic innovation can enhance a company's brand reputation, as customers associate the brand with pleasure, enjoyment, or entertainment (Khalf & Ali, 2024).

Social Innovation

Social innovation refers to developing new solutions, products, services, or processes that address social problems, improve the quality of life, and promote social change (Alvarenga et al., 2024). Researchers believe that non-profit organizations, social enterprises, governments, and businesses can benefit from social innovation (Prihadyanti et al., 2024). It also addresses social issues, including poverty, inequality, education, healthcare, and environmental sustainability (Khalf & Ali, 2024). Moreover, researchers believe social innovation often involves collaboration and co-creation with stakeholders, beneficiaries, communities, and organizations (Morandeira-Arca et al., 2024). Khalf and Ali (2024) assert that microfinance programs, education technology platforms, sustainable agriculture initiatives, and accessible healthcare programs are a few examples of social innovation. Additionally, social innovation generates economic benefits, such as job creation, economic growth, and increased competitiveness (Khalf & Ali, 2024). Furthermore, social innovation promotes environmental sustainability by reducing waste and pollution (Morandeira-Arca et al., 2024).

Altusim Innovation

Altruism innovation refers to developing new products, services, or solutions that prioritize the well-being of others (Olumekor et al., 2023)- often without the expectation of financial gain or personal benefit (Wang et al., 2024). Ahmad et al. (2023) believe this type of innovation is driven by a genuine concern for the welfare of others and a desire to create a positive social impact in society (Cuong et al., 2023). Other characteristics of altruism innovation are selflessness, empathy, and collaboration with non-profit organizations, governments, and local communities (Olumekor et al., 2022). Balaskas et al. (2023). assert that low-cost medical devices and small-scale farmers are examples of altruistic innovation.

Olumekor et al. (2023) believe that altruism innovation has several benefits. For example, it improves the lives of individuals and communities. Moreover, Altruism innovation increases empathy and understanding of individuals in a society (Wang et al., 2024). Additionally, altruistic innovation provides a sense of personal fulfillment and purpose as individuals and organizations collaborate to create positive social change (Ahmad et al., 2023). Researchers also believe that firms that engage in altruistic innovation can enhance their reputation and build trust with stakeholders (Cuong et al., 2023).

Cognitive innovation

Cognitive innovation develops new ideas, products, services, or processes that enhance human cognition, learning, and problem-solving abilities (Ncube et al., 2023). Researchers believe this innovation focuses on improving how people think, learn, and interact with information (Balzano & Marzi, 2023). Moreover, cognitive innovation manifests in various forms, such as artificial intelligence and machine learning (Yang & Shao, 2024). By leveraging these approaches, cognitive innovation aims to improve cognitive performance, increase productivity, and enhance overall quality of life (Qin et al., 2024).

Extant literature suggests that the development of brain-computer interfaces, intelligent tutoring systems, and neuro-feedback training are a few examples of cognitive innovation (Elsner, 2024). Moreover, Sund (2024) asserts that these innovations have the potential to revolutionize the way we learn, work, and interact with each other (Marzi et al., 2023). Researchers believe cognitive innovation can lead to better decision-making, improved critical thinking, and enhanced creativity (Yang & Shao, 2024). Moreover, cognitive innovation will profoundly impact education, healthcare, and the workforce (Ncube et al., 2023).

Hypothesis Development

Functional Innovation and Online Buying Behavior

Researchers believe functional innovation positively and negatively affects consumers' online buying behavior (Akram & Lavuri, 2024). The positive effect of functional innovation is that it increases customer satisfaction, improves conversion rates, and enhances customer loyalty (Roszko-Wójtowicz et al., 2024). As a result, it creates a more engaging and satisfying online shopping experience, leading to increased customer loyalty and retention (Akram & Lavuri, 2024).

Contrarily, excessive functional innovation can lead to information overload, making it difficult for customers to navigate and make purchasing decisions (Jiang et al., 2022). Moreover, over-reliance on functional innovation makes online retailers vulnerable to technical issues, which may adversely affect customer online buying behavior (Miller et al., 2023). Finally, excessive functional innovation leads to a homogenization of online shopping experiences (Khalf & Ali, 2024). As a result, it becomes difficult for retailers to differentiate themselves. Thus, we argue that online retailers can maximize the benefits of functional innovation by focusing on their target audience (Akram & Lavuri, 2024).

H1: Functional innovation “positively affects consumer online buying behavior.”

Functional Innovation and Skeptical Buying Behavior

Functional innovation increases transparency and credibility, addressing skeptical consumers' concerns about authenticity and reliability (Kim & Cha, 2024). It provides clear and accurate information about products or services, which helps skeptical consumers make informed decisions (Kiymalıoğlu, 2023). Moreover, functional innovation enhances the online shopping experience, making it more engaging, interactive, and personalized (Kim & Cha, 2024). This increases skeptical consumers' confidence and trust in purchasing decisions (Londaridze, 2024). Moreover, functional innovation facilitates social proof, allowing skeptical consumers to see reviews, ratings, and recommendations from other customers (Kim & Cha, 2024). This builds trust and credibility, as skeptical consumers are more likely to trust the opinions of their peers (Kim & Cha, 2024). Furthermore, functional innovation can also give skeptical consumers a sense of control, allowing them to customize and personalize their online experiences (Kiymalıoğlu, 2023). This reduces concerns about risk and uncertainty, as skeptical consumers feel more in control of their purchasing decisions (Londaridze, 2024). Thus, we argue that functional innovation has the potential to transform skeptical consumers' online behavior, building trust, credibility, and confidence in the online shopping experience (Kim & Cha, 2024).

H1A: Functional innovation “positively affects skeptical consumer online buying behavior.”

Functional Innovation and Indecisive Consumer

Past studies have shown that functional innovation positively affects indecisive consumer online behavior (Vinoi et al., 2024). Camilleri et al. (2024) believe indecisive consumers need help making purchase decisions. However, functional innovation facilitates indecisive consumers' online purchasing decisions by providing tools and features that simplify decision-making (Altınkan & Armağan, 2024). Vinoi et al.

(2024) assert that functional innovation helps retailers provide personalized product recommendations, product comparisons, and customer reviews to help indecisive consumers make more informed decisions. Moreover, functional innovations such as virtual try-ons and 360-degree product views provide indecisive consumers with a more immersive and engaging shopping experience (Vinoi et al., 2024). As a result, they can evaluate products and make more confident purchasing decisions (Altınkan & Armağan, 2024).

Contrarily, functional innovation can also hinder indecisive consumers' online purchasing decisions if perceived as overwhelming or confusing (Vinoi et al., 2024). For example, too many product options, complex navigation, and excessive information exacerbate indecisiveness, negatively affecting online buying behavior (Camilleri et al., 2024). To target indecisive consumers effectively, online retailers should develop functional innovations that simplify decision-making and provide clear and concise information (Altınkan & Armağan, 2024).

H1B: Functional innovation “positively affects indecisive consumer online buying behavior.”

Functional Innovation on and Conscious Consumer

Many studies highlighted that functional innovation positively affects conscious consumers' online buying behavior (Nurjaman, 2024). Conscious consumers are concerned about social, environmental, and ethical issues, and functional innovation can either support or contradict their values (Sharma et al., 2022). Researchers believe functional innovation supports conscious consumers' values by providing tools and features that promote sustainability, transparency, and social responsibility (Siddiqui et al., 2023). For instance, online retailers can implement functional innovations such as carbon footprint calculators, sustainable packaging options, and fair trade certifications (Kumar et al., 2022). These features appeal to conscious consumers' values. Moreover, functional innovations, including product reviews, ratings, and recommendations from other conscious consumers, can help build trust and credibility, influencing purchasing decisions (Nurjaman, 2024).

On the contrary, functional innovation can contradict conscious consumers' values if it prioritizes convenience, speed, and low costs over sustainability and social responsibility (Nurjaman, 2024). For example, functional innovations that promote fast and cheap shipping at the expense of increased carbon emissions may adversely affect conscious consumer online buying behavior (Sharma et al., 2022). Moreover, functional innovations using manipulative tactics, such as dark patterns, to influence purchasing

decisions contradict conscious consumers' values (Sharma et al., 2022). As a result, it will negatively affect conscious consumers' online behavior (Siddiqui et al., 2023).

H1C: "Functional innovation positively affects consumer online buying behavior."

Functional Innovation and Investigative Consumer

Past studies have cited the substantial effect of functional innovation on investigative consumers' online behavior (Kaynak et al., 2023). Investigative consumers thoroughly research and evaluate products before purchasing (Akter et al., 2023). Some studies found that functional innovation can facilitate investigative consumers' research and evaluation by providing tools and features that offer detailed product information, comparisons, and analysis (Miller et al., 2023). For example, online vendors can implement functional innovations such as product configurators, virtual product demonstrations, and detailed product specifications (Liu. et al., 2023). These details cater to investigative consumers' desire for comprehensive information (Kaynak et al., 2023).

On the contrary, functional innovation obstructs investigative consumers' research and evaluation if perceived as overly complex, confusing, or misleading (Akter et al., 2023). For example, functional innovations that use complex navigation or manipulative tactics can frustrate investigative consumers (Miller et al., 2023). As a result, they may seek information elsewhere (Liu. et al., 2023). Furthermore, functional innovations focusing on style over substance can detract investigation consumer evaluation processes. Online retailers can target investigative consumers by developing functional innovations that provide comprehensive and accurate product information that caters to their desire for detailed research and evaluation (Kaynak et al., 2023).

H1D: "Functional innovation positively affects investigative consumer online buying behavior."

Hedonic Innovation and Consumer Online Buying Behavior

Many past studies document that hedonic innovation profoundly impacts consumer online buying behavior (Khalf & Ali, 2024). Hedonic innovation refers to developing new or improved products, services, or experiences that provide sensory pleasure, enjoyment, and emotional fulfillment (Zhao et al., 2024). Akter et al. (2023) assert that hedonic innovation can significantly influence online consumer behavior, increasing engagement, satisfaction, and loyalty (Khalf & Ali, 2022). Moreover, hedonic innovation can engage consumers with a brand by creating an emotional connection. As a result, it promotes online buying behavior (Zhao et al., 2024). Furthermore, Kaynak et al. (2023) assert that hedonic innovation provides a sensory experience that simulates the

physical shopping experience.

Additionally, hedonic innovation promotes personalized experiences catering to consumer preferences and interests (Khalf & Ali, 2024). Furthermore, hedonic innovation facilitates social interaction and community building. Zhao et al. (2024) believe hedonic innovation also provides novelty and surprise to keep consumers engaged and interested (Akter et al. (2023). On the contrary, complex, unclear, and inaccurate functional innovation adversely affects consumers' online buying behavior (Khalf & Ali, 202). For instance, functional innovations that use complex technical language or manipulative tactics negatively affect consumers' online buying behavior (Zhao et al., 2024). Furthermore, functional innovations focusing on style over substance detract investigative consumers from their consumer research and evaluation processes (Kaynak et al., 2023). To effectively target investigative consumers, online retailers should develop functional innovations that provide comprehensive and accurate product information (Zhao et al., 2024).

H2: "Hedonic innovation positively affects consumer online buying behavior."

Social Innovation and Online Buying Behavior

Social innovation fosters a sense of community and social connection, enabling consumers to interact with each other in new and meaningful ways (Morandeira-Arca et al., 2024). As a result, it increases trust, loyalty, and advocacy among consumers (Prihadyanti et al., 2024). Researchers believe social innovation allows consumers to share their experiences, opinions, and feedback, influencing others' purchasing decisions (Khalf & Ali, 2024). This can create a ripple effect, where consumers are more likely to purchase products or services recommended by their peers (Prihadyanti et al., 2024). Moreover, social innovation enables brands to showcase their values, mission, and social responsibility initiatives, resonating with consumers who share similar values. This can increase brand loyalty and affinity (Morandeira-Arca et al., 2024). Furthermore, social innovation facilitates personalized and dynamic online experiences, allowing consumers to tailor their interactions and purchases to their preferences (Prihadyanti et al., 2024). This can increase satisfaction, engagement, and repeat business (Khalf & Ali, 2024). Furthermore, social innovation empowers consumers to participate in product development, providing feedback, suggestions, and ideas that can shape the creation of new products or services. This can increase consumer satisfaction, loyalty, and advocacy (Morandeira-Arca et al., 2024).

H3: "Social innovation positively affects consumer online buying behavior."

Altruism Innovation and Online Buying Behavior

Past studies found inconsistent results on the association between altruism innovation and online buying behavior (Sharma et al., 2022). Some studies document that altruism positively affects consumers' online buying behavior (Nurjaman, 2024). These studies argue that consumers are likelier to purchase from companies that prioritize altruism and social responsibility (Altınkan & Armağan, 2024). Moreover, researchers believe that innovation in altruism also enhances a company's reputation and brand image (Nurjaman, 2024). Consequently, it increases consumer trust and loyalty (Kumar et al., 2022). Moreover, researchers believe that altruism innovation creates an emotional connection between consumers and the brand, fostering a sense of shared values and purpose (Londaridze, 2024).

On the contrary, innovation in altruism negatively affects consumer online behavior (Sharma et al., 2022). For example, many firms use altruism innovation as a marketing tactic without prioritizing social responsibility or environmental sustainability (Altınkan & Armağan, 2024). Many researchers believe this tactic is greenwashing, which leads to skepticism and mistrust (Nurjaman, 2024). Furthermore, researchers assert that consumers may be skeptical of companies' altruistic claims, particularly if their practices are not transparent (Altınkan & Armağan, 2024).

H4: "Altruism innovation positively affects consumer online buying behavior."

Cognitive Innovation and Online Behavior

The effect of cognitive innovation on consumer online behavior is positive and negative (Wang et al., 2024). Cognitive innovation also promotes immersive online experiences (Cicciù & Carmona, 2024). Moreover, it improves decision-making, as consumers are presented with novel, relevant information that facilitates more informed choices (Londaridze, 2024). Researchers believe cognitive innovation promotes brand loyalty, as consumers connect emotionally with online brands that provide unique and memorable experiences (Arifin et al., 2022).

In contrast, cognitive innovation can also negatively affect consumer online buying behavior (Wang et al., 2024). Çakıroğlu (2022) asserts that novel and unfamiliar online experiences can also erode consumer trust, particularly if the innovation is perceived as intrusive or manipulative. Moreover, cognitive innovation increases consumers' anxiety, especially if their online experience is complex or difficult to navigate (Cicciù & Carmona, 2024). Thus, we argue that cognitive innovation's effect on consumer online behavior is a delicate balance between enhancing engagement and decision-making (Arifin et al., 2022).

H5: "Cognitive innovation positively affects consumer online buying behavior."

Material and Method

Research, Population, and Sample Selection

We have focused on Türkiye's electronic industry (Özgüner et al., 2023). It has 2000 manufacturing companies, which employ more than 30,000 people. Its contribution to GDP is 2% (Teker et al., 2024). Given its importance, many international firms have established manufacturing units in Türkiye (Gurcam, 2023), including Microsoft, Intel, and General Electric (Demiryol& Soyaltin-Colella, 2024). Türkiye has various segments, but consumer electronics is the largest, valued at USD 4.4 billion (Şarlıoğlu et al., 2023). Some well-known electronics companies in Türkiye are "Arcelik" and "Vestel." They are significant exporters of electronics goods to Europe and other countries (Gurbuz & Tuncer, 2023).

Researchers have suggested different techniques for calculating the minimum sample size (Ghauri et al., 2020). Some suggest using standard deviation, the desired margin of error, and the confidence level from the target population (Haslam et al., 2024). Others suggest using power analysis to calculate the minimum sample size (Bell et al., 2022). Another commonly used technique is the Raosoft calculator (Privitera, 2024). We have used the Raosoft calculator to calculate the sample size. The target population for this study is 30,000. Using this population, we found that a sample of 387 would be appropriate. However, we distributed 450 questionnaires and received 437 complete instruments.

Scales and Measures

Researchers suggest using a closed-ended questionnaire for large studies. Our study sample size was large, so we adopted a closed-ended questionnaire from past studies. The scale used in the questionnaire is based on a five-point Likert Scale (five = high agreement and one = low agreement). We translated the English version of the questionnaire into Turkish, as our target population is not well-versed in English.

Pilot Test

Large-scale research is time-consuming and expensive. Therefore, researchers suggest conducting a pilot test before the study (Edeh et al., 2023). Moreover, it helps identify inconsistencies and flaws in the research design. This allows researchers to revise and improve research design before investing time and resources in large-scale research projects (Ghauri et al., 2020). Given its importance, the study also conducted a pre-test. We found no ambiguities in the wording of the questionnaire, and reliability

values based on the pre-test were within the prescribed limit (Bell et al., 2022).

Statistical Analysis

The study used SPSS for statistical analysis. Initially, we fed the collected data into the Excel sheet, which we then imported into SPSS. Then, we cleaned it by removing missing values, outliers, and other errors. We then generated reliability, validity, and hypothesis results.

Findings of the Research

Respondent Profile

A demographic profile is important in research (Privitera, 2024). It provides a detailed understanding of the characteristics of the sample (Edeh et al., 2023). Bell et al. (2022) stress that demographic profiles help researchers identify the respondents' target audiences, trends, and patterns. Moreover, it allows marketers to identify target segments. Table 1 depicts the respondents' profiles.

Table 1 General Information about Participants

Gender	Percentage	Age	Percentage
Female	42.60%	18-21	3.40%
Male	57.40%	22-25	9.80%
Total	100.00%	26-29	11.80%
Marital status	Percentage	30-33	29.90%
Married	61.30%	34-37	30.40%
Single	38.70%	38-41	14.70%
Total	100.00%	Total	100.0%
Monthly Income	Percentage	Education	Percentage
8506 and below	19.10%	High school	6.90%
8507-9999	27.00%	Associate Degree	26.00%
10000-14999	12.30%	License	11.80%
15000-249999	19.60%	Degree	38.20%
25000 and above	22.00%	PhD and above	17.10
Total	100.00%	Total	100.00%
Jobs	Percentage	Tools Used	Percentage
Public sector	47.10%	Television	6.90%
Private sector	17.60%	Internet	90.00%
Employee	13.20%	Fax –Letter	1.00%
Housewife	22.10%	Others	2.10%
Total	100.00%	Total	100%

Convergent Validity

Internal consistency and convergent validity are crucial in research (Haslam et al., 2024). Internal consistency confirms that items within a scale measure a single concept (Privitera, 2024). Convergent validity ensures that a measure accurately captures the intended concept (Bell et al., 2022). Establishing both ensures accurate and reliable results, increasing confidence in research findings (Ghauri et al., 2020). Table 2 depicts the related results.

Table 2: Internal Consistency and Convergent Validity

Hypotheses	Cronbach's Alpha	Composite Reliability (rho_a)	Average Variance Extracted (AVE)
Altruism Consumer Innovativeness	0.701	0.706	0.632
Cognitive Consumer Innovativeness	0.803	.0816	0.832
Conscious	0.813	0.821	0.848
Functional Consumer Buying Behavior	0.823	0.828	0.669
Hedonic Consumer innovativeness	0.798	0.801	0.601
Indecisive	0.769	0.778	0.794
Purchase Behavior	0.811	0.815	0.624
Investigative Knowledge	0.823	0.828	0.557
Skeptical	0.845	0.865	0.68
Social Consumer Innovativeness	0.834	0.838	0.629

All the constructs' values exceed the threshold level of 0.700. The AVE values for all “constructs exceed the 0.500 threshold level.” These results suggest acceptable internal consistency and convergent validity” of the constructs (Haslam et al., 2024).

Discriminant Validity

Discriminant validity confirms that a latent variable is unique and measures a specific construct, not a different one (Privitera, 2024). The study used Fornell and Archer's (1981) criteria for discriminant validity (Haslam et al., 2024). Table 3 depicts the related results.

Table3: Discriminant Validity

Constructs	ALT	CG	CN	FN	HND	IND	BB	INV	SKB	SING
Altruism	0.795									
Cognitive	0.526	0.912								
Conscious	0.325	0.528	0.921							
Functional	0.074	0.197	0.444	0.818						
Hedonic	0.61	0.821	0.699	0.383	0.775					
Indecisive	0.118	0.335	0.519	0.501	0.491	0.891				
B. Behaviour	0.296	0.529	0.707	0.498	0.724	0.685	0.79			
Investigative	0.273	0.445	0.661	0.59	0.636	0.721	0.838	0.746		
Skeptical	0.317	0.288	0.286	0.355	0.354	0.355	0.372	0.395	0.825	
S. Innovativeness	0.327	0.56	0.592	0.396	0.759	0.408	0.558	0.525	0.253	0.793

We found that the square root of AVE for each construct exceeded Pearson Correlation values, indicating that each construct measures a unique concept.

Hypothesis Results

This study has examined the impact of functional, hedonic, social, and altruistic innovativeness on online buying behavior. We also examined the effect of functional innovation on the sub-dimensions of consumer buying behavior (i.e., skeptical, indecisive, and conscious, investigative). The results follow in Table 4.

Table 4: Hypotheses Results

Hypotheses	β	T. Value	P. Value	Result
Functional Innovation -> Online Buying Behavior (H1)	0.236	12.082	0.000	Accepted
Functional innovation -> Skeptical Behavior (H1A)	0.316	10.845	0.000	Accepted
Functional Innovation-> Indecisive Behavior (H1B)	0.322	12.448	0.000	Accepted
Functional. Innovation -> Conscious Behavior (H1C)	0.171	6.996	0.000	Accepted
Functional Behavior -> Investigative Behavior (H1D)	0.380	16.508	0.000	Accepted
Hedonic Innovation ->Online Buying Behavior (H2)	0.826	23.343	0.000	Accepted
Social. Innovation ->Online Buying Behavior (H3)	0.199	3.060	0.001	Accepted
Altruism Innovation ->Online Buying Behavior (H4)	0.193	8.212	0.000	Accepted
Hedonic Innovation -> Online Buying Behavior (H5)	0.127	3.540	0.001	Accepted

The results support all the hypotheses. The strongest effect is on Hypothesis 2 ($\beta=0.826$) and the lowest is in Hypothesis 5 ($\beta=0.127$).

Discussion and Conclusion

Discussion

The “study documents that functional innovation positively affects consumer online buying behavior (H1).” Researchers believe functional innovation positively and negatively affects consumers' online buying behavior (Akram & Lavuri, 2024). The positive effect of functional innovation is that it increases customer satisfaction, improves conversion rates, and enhances customer loyalty (Roszko-Wójtowicz et al., 2024). As a result, it creates a more engaging and satisfying online shopping experience, leading to increased customer loyalty and retention (Akram & Lavuri, 2024). Contrarily, excessive functional innovation can lead to information overload, making it difficult for customers to navigate and make purchasing decisions (Jiang et al., 2022). Moreover, over-reliance on functional innovation makes online retailers vulnerable to technical issues, which may adversely affect customer online behavior (Miller et al., 2023).

The study found that “functional innovation positively affects skeptical consumer online buying behavior” (H1A). Functional innovation increases transparency and credibility, addressing skeptical consumers' concerns about authenticity and reliability (Kim & Cha, 2024). It provides clear and accurate information about products or services, which helps skeptical consumers make informed decisions (Kiymalıoğlu, 2023). Moreover, functional innovation enhances consumer's online shopping experience, making it more engaging, interactive, and personalized (Kim & Cha, 2024). This increases skeptical consumer's confidence and trust in purchasing decisions (Londaridze, 2024). Moreover, functional innovation facilitates social proof, allowing skeptical consumers to see reviews, ratings, and recommendations from other customers (Kim & Cha, 2024). This builds trust and credibility, as skeptical consumers are more likely to trust the opinions of their peers (Kim & Cha, 2024). Furthermore, functional innovation can also give skeptical consumers a sense of control, allowing them to customize and personalize their online experiences (Kiymalıoğlu, 2023). This reduces concerns about risk and uncertainty, as skeptical consumers feel more in control of their purchasing decisions (Londaridze, 2024).

The study found that “functional innovation positively affects indecisive consumer online buying behavior (H1B).” Past studies have shown that functional innovation positively affects indecisive consumer online behavior (Vinoi et al., 2024). Camilleri et al. (2024) believe indecisive consumers need help making purchase decisions. Researchers believe functional innovation facilitates indecisive consumers' online purchasing decisions by providing tools and features that simplify decision-making (Altınkan & Armağan, 2024). Vinoi et al. (2024) assert that functional innovation helps retailers

provide personalized product recommendations, product comparisons, and customer reviews to help indecisive consumers make more informed decisions. Moreover, functional innovations such as virtual try-ons and 360-degree product views provide indecisive consumers with a more immersive and engaging shopping experience (Vinoi et al., 2024). As a result, they can evaluate products and make more confident purchasing decisions (Altınkan & Armağan, 2024).

The study found that “functional innovation positively affects conscious consumer online buying behavior (H1C). Many studies highlighted that functional innovation positively affects conscious consumers' online buying behavior (Nurjaman, 2024). Conscious consumers are concerned about social, environmental, and ethical issues, and functional innovation can either support or contradict their values (Sharma et al., 2022). Researchers believe functional innovation supports conscious consumers' values by providing tools and features that promote sustainability, transparency, and social responsibility (Siddiqui et al., 2023). For instance, online retailers can implement functional innovations such as carbon footprint calculators, sustainable packaging options, and fair trade certifications (Kumar et al., 2022). These features appeal to conscious consumers' values. Moreover, functional innovations, including product reviews, ratings, and recommendations from other conscious consumers, can help build trust and credibility, influencing purchasing decisions (Nurjaman, 2024).

We found that “functional innovation positively affects investigative consumer online buying behavior (H1D).” Past studies have cited the substantial effect of functional innovation on investigative consumers' online behavior (Kaynak et al., 2023). Investigative consumers thoroughly research and evaluate products before purchasing (Aker et al., 2023). Some studies found that functional innovation can facilitate investigative consumers' research and evaluation by providing tools and features that offer detailed product information, comparisons, and analysis (Miller et al., 2023). For example, online vendors can implement functional innovations such as product configurators, virtual product demonstrations, and detailed product specifications (Liu. et al., 2023). These details cater to investigative consumers' desire for comprehensive information (Kaynak et al., 2023). On the contrary, functional innovation obstructs investigative consumers' research and evaluation if perceived as overly complex, confusing, or misleading (Aker et al., 2023). For example, functional innovations that use complex navigation or manipulative tactics can frustrate investigative consumers (Miller et al., 2023). As a result, they may seek information elsewhere (Liu. et al., 2023).

We found hedonic innovation positively affects consumer online behavior (H2).” Hedonic innovativeness is an important precursor of online buying behavior (Khalf &

Ali, 2024). Many past studies document that hedonic innovation profoundly impacts consumer online buying behavior (Khalf & Ali, 2024). Hedonic innovation refers to developing new or improved products, services, or experiences that provide sensory pleasure, enjoyment, and emotional fulfillment (Zhao et al., 2024). Akter et al. (2023) assert that hedonic innovation can significantly influence online consumer behavior, increasing engagement, satisfaction, and loyalty (Khalf & Ali, 2022). Moreover, hedonic innovation can engage consumers with a brand by creating an emotional connection. As a result, it promotes online buying behavior (Zhao et al., 2024). Moreover, Kaynak et al. (2023) assert that hedonic innovation provides a sensory experience that simulates the physical shopping experience.

The study found that “social innovation positively affects consumer online buying behavior (H3).” Social innovation fosters a sense of community and social connection, enabling consumers to interact with each other and brands in new and meaningful ways (Morandeira-Arca et al., 2024). As a result, it increases trust, loyalty, and advocacy among consumers (Prihadyanti et al., 2024). Researchers believe social innovation allows consumers to share their experiences, opinions, and feedback, influencing others' purchasing decisions (Khalf & Ali, 2024). This can create a ripple effect, where consumers are more likely to purchase products or services recommended by their peers (Prihadyanti et al., 2024). Moreover, social innovation enables brands to showcase their values, mission, and social responsibility initiatives, resonating with consumers who share similar values. This can increase brand loyalty and affinity (Morandeira-Arca et al., 2024).

This study found that “altruism innovativeness positively affects consumer online buying behavior” (H4). Past studies found inconsistent results on the association between altruism innovation and online buying behavior (Sharma et al., 2022). Some studies document that altruism positively affects consumers' online buying behavior (Nurjaman, 2024). These studies argue that consumers are likelier to purchase from companies that prioritize altruism and social responsibility (Altınkan & Armağan, 2024). Moreover, researchers believe that innovation in altruism also enhances a company's reputation and brand image (Nurjaman, 2024). Consequently, it increases consumer trust and loyalty (Kumar et al., 2022). Moreover, researchers believe that altruism innovation creates an emotional connection between consumers and the brand, fostering a sense of shared values and purpose (Londaridze, 2024). On the contrary, innovation in altruism negatively affects consumer online behavior (Sharma et al., 2022).

We found that “cognitive innovation positively affects consumer online buying behavior among consumers (H5).” The effect of cognitive innovation on consumer

online behavior is positive and negative (Wang et al., 2024). Cognitive innovation also promotes consumer online immersive and interactive experiences (Cicciù & Carmona, 2024). Moreover, it improves decision-making, as consumers are presented with novel, relevant information that facilitates more informed choices (Londaridze, 2024). Researchers believe cognitive innovation promotes brand loyalty, as consumers connect emotionally with online brands that provide unique and memorable experiences (Arifin et al., 2022).

In contrast, studies document that cognitive innovation can also negatively affect consumer online buying behavior (Wang et al., 2024). Çakıroğlu (2022) asserts that novel and unfamiliar online experiences can also erode consumer trust, particularly if the innovation is perceived as intrusive or manipulative. Moreover, cognitive innovation increases consumers' anxiety, especially if their online experience is complex or difficult to navigate (Cicciù & Carmona, 2024).

Conclusion

Online buying behavior has surged significantly in the prevailing technological era, marking a notable shift in consumer habits. Consumers purchase online through a computer-based interface that connects with the virtual shops. It lets consumers interact with the seller digitally. It lets consumers interact with the seller digitally. Moreover, high-end smartphones like the iPhone have made shopping online convenient (García-Salirrosas, 2022). We have focused on Türkiye as it significantly contributes to GDP and employment generation. The study examined the impact of functional innovation on consumer online behavior. The impact of functional innovation on consumer's skeptical, indecisive, conscious, and investigative behavior. The impact of hedonic, social, altruistic, and cognitive innovations on consumer online buying behavior. Our results support all the proposed hypotheses. The findings aligned with the past studies.

Implications

Skeptical consumers avoid risk, are cautious decision-makers, and are concerned about transparency and data privacy. Firms dealing with such consumers must build trust through transparent communication and deliver the promised value proposition. Indecisive consumers need help with decision-making. Before making purchase decisions, they compare many options. Still, they often make wrong buying decisions. Firms that deal with such consumers must provide product information and reviews of other consumers who have previously used their goods and services. Moreover, firms can gain the confidence of indecisive consumers by providing them with social proof, including customer testimonials and influencer engagement.

Conscious consumers are more concerned about the environment than other consumers. Firms that deal with such consumers must adopt sustainable practices, transparent labeling, and ethical marketing. However, firms may also develop and collaborate with social and environmental organizations and market innovative sustainable products. These measures also contribute to attracting conscious consumers. Investigative consumers obtain in-depth information about goods and services before deciding. They also value a firm's reputation and compare the value propositions of multiple firms before buying. To engage such consumers, firms must provide authentic customer reviews and detailed product comparisons and display company values and mission statements on their web pages.

Limitations and Future Research

The study collected data from Türkiye's electronic industry. We recommend that others collect data from other industries. The study examined the impact of the five innovations —functional, hedonic, socially conscious, altruism, and cognitive— on online buying behaviors. We recommend that others use the same conceptual framework for the buying behavior of physical stores. The study did not use any moderators or mediators. We advise others to include mediators or moderators, such as perceived risks and demographic factors. Our research design was quantitative. Besides other advantages, it has certain limitations, such as respondents being unable to share their perceptions. Thus, we advise others to use mixed or qualitative research design.

Annexure: 1

Constructs and Items Used in the Questionnaire

Çevrimiçi Satın Alma Ölçeği

Çevrimiçi elektronik eşya değerlendirmeleri, farklı özelliklerin tutarsız puan (yıldız) derecelendirmelerini içerir

Çevrimiçi elektronik eşya değerlendirmeleri, elektronik eşya özellikleri hakkında yorumlar ile puan (yıldız) değerlendirmeleri arasında çelişki oluşturmaktadır.

Çevrimiçi elektronik eşya değerlendirmeleri, aynı elektronik eşya özelliği hakkında karmaşık (farklı) puan (yıldız) değerlendirmeleri içermektedir.

Çevrimiçi elektronik eşya yorumları bilgilendirme, elektronik eşya özellikleri hakkında tutarsızlığa neden olmaktadır.

Çevrimiçi elektronik eşya yorumlarında tüketicilerin karmaşık ve farklı deneyimleri, elektronik eşya özellikleri hakkında çelişkili görüşler sunar.

Çevrimiçi elektronik eşya yorumları, elektronik eşya özellikleri ile ilgili çok fazla farklı görüş sunmaktadır.

Çevrimiçi elektronik eşya değerlendirmelerine yönelik çelişkili tepkilere rastlıyorum.

Çevrimiçi elektronik eşya değerlendirmelerini incelediğimde verilen tepkilerden dolayı kendimi çelişki içerisinde hissediyorum.

Çevrimiçi değerlendirmeleri inceledikten sonra, çevrimiçi incelemelere yönelik düşünce ve duygularımda gerginlik hissediyorum.

Çevrimiçi elektronik eşya değerlendirmelerini bilgi olarak kullanmak konusunda kararsız hissediyorum.

Çevrimiçi değerlendirmeleri inceledikten sonra elektronik eşya hizmetini satın alma olasılığım oldukça yüksektir.

Olumlu ve olumsuz çevrimiçi değerlendirmeleri ve yorumları inceledikten sonra elektronik eşya hizmeti satın alma isteğim artmaktadır.

Çevrimiçi değerlendirmelerine karşı kendimi kararsız hissediyorum.

Çevrimiçi elektronik eşya değerlendirmelerini incelemek, satın almadan önce daha iyi veya doğru karar vermemi sağlar.

Çevrimiçi elektronik eşya değerlendirmelerini incelemek satın alma konusundaki ilgimi arttırmaktadır.

Çevrimiçi elektronik eşya değerlendirmelerinden emin olmak için, sık sık başkalarının ne kullandığını gözlemledim.

Deneyimim olsa bile sık sık elektronik eşya hizmetleri hakkında sorular sorarak bilgi almaya çalışırım.

Bir elektronik eşya markasından elde edilebilecek en iyi alternatifi seçmeye yardımcı olması için 5 insanlara danışırım.

Elektronik eşya alışverişi yapmadan önce bu eşya hakkında, arkadaşlarımdan, meslektaşlarımdan veya ailemden sık sık bilgi toplarım.

Güdülenmiş Tüketici Yenilikçiliği Ölçeği

Yeni ürünleri satın almaya istekliyim.

Yakınlarıma ve arkadaşlarıma aldığım yeni ürünleri tavsiye ederim.

Gelecekte de yeni ürünleri almayı düşünüyorum.

Başkalarını etkileyecek yenilikleri satın almayı severim.

Kendimi başkalarından ayıracak yeni bir ürüne sahip olmayı isterim.

Arkadaşlarımla sahip olmadıkları yeni ürünleri alarak onların önünde olmayı isterim.

Başkaları tarafından görülebilen ve saygınlığımı artıracak yenilikleri kesinlikle satın alırım.

Zaman tasarrufu sağlayacak yeni bir ürün piyasaya çıkarsa, hemen satın alırım.

Daha fazla konfor sağlayan yeni bir ürünü satın almak konusunda tereddüt etmem.

Daha fazla fonksiyonelliğe sahip yeni bir ürünü satın alma konusunda tereddüt etmem.

Daha kullanışlı yeni bir ürün bulursam onu satın almayı tercih ederim.

Yenilikleri kullanmak bana haz verir.

Yeni ürünler almak kendimi iyi hissettirir.

Çoğunlukla sorunumu çözmeye yardım eden yenilikleri satın alırım.

Bilgilerimi geliştirecek yenilikleri bulur ve bu yenilikleri hemen satın alırım.

Beni mantıksal olarak düşünmeye sevk eden yeni ürünleri sıklıkla satın alırım.

Zihnimi çalıştıran yeni ürünleri satın alan bir insanımdır.

Sıklıkla yeni ürünleri ve markalar hakkında bilgi araştırırım.

Yeni markaları tanıtan dergileri ve sayfalarını severim.

Sürekli yeni ürünleri deneme arayışı içerisindeyim.

Yeni ürünler ve markalar hakkında bilgilerin verildiği yerlere gitmeyi severim.

Alışverişe çıktığımda yeni ürün ve markaları kontrol etmeye fazla zaman ayırmam.

Yeni bir ürünü satın almakla ilgilendiğimde o hizmeti kullanmış olan arkadaş ve tanıdıklarımın bana o hizmeti denemem gerektiğine ilişkin önerilerine güvenmem.

Yeni bir ürün satın alıp almama kararını verirken deneyimli arkadaş ve akrabalarımın tavsiyelerine güvenmem.

Yeni ürünleri satın alıp almama kararını vermeden önce tecrübeli arkadaşlarımla bilgilerine güvenmem.

Yeni ürünleri satın alma kararını o ürünleri denemiş olan arkadaşlarımla fikirlerine bağlı olmadan veririm.

Yeni bir markayı satın almadan önce, markayla ilgili deneyimi olan bir arkadaşımı danışmayı tercih ederim.

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Conflict of Interest

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Factors Affecting Patients' Support and Satisfaction: Investigating A Mediating Role of Patients' Empowerment

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Abstract

Satisfying the healthcare customers is more important than any other service because a patient's health and sometimes life are at stake. Family and doctor's support, access to health, and patient-perceived empowerment are important antecedents to patient satisfaction. However, we found limited studies that have used these variables in their studies. The study documents that family support insignificantly affects patient satisfaction. However, the study found that "doctor support, access to health care, and patient-perceived empowerment positively affect patient satisfaction." Regarding the mediating effect, we found that "patient-perceived empowerment mediates access to health care and patient satisfaction. However, the study did not find support for the mediating effect of patient-perceived empowerment on (i) family support and patient satisfaction and (ii) doctor support and patient satisfaction.

Keywords: *Family support, doctor support, patient-perceived empowerment, and patient satisfaction.*

Introduction

Patient satisfaction is critical to healthcare beyond medical treatment (Miolda et al., 2023). It is about creating a supportive and compassionate environment where patients feel heard, understood, and valued. When healthcare providers take the time to listen, explain, and involve patients in their care, it builds trust and fosters loyalty (Kim et al.,

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2024). Patients also appreciate the little things, like easy scheduling, minimal wait times, and a comfortable waiting area (Rowe & Knox, 2023). By prioritizing patient satisfaction, healthcare providers can improve health outcomes and create a positive experience beyond the clinic or hospital walls (Awwad et al., 2025). Moreover, by putting patients at the center of care, healthcare providers can address their unique needs, leading to better results and satisfaction (Omaghomi et al., 2024).

From a social perspective (Wang et al., 2023), patient satisfaction is shaped by various factors, including social support (Liu et al., 2023), cultural background (Akthar et al., 2023), and socioeconomic status (Alwedyan et al., 2024). Moreover, researchers believe patients with strong social connections and support networks are more satisfied with their care (Akthar et al., 2023). Patients from lower socioeconomic backgrounds (Ye et al., 2024) are often less satisfied. Furthermore, patients with limited health literacy (Hernandez et al., 2024) may need help understanding the doctors' recommendations.

Many studies on patient satisfaction are available, using different antecedents in different countries. For example, a study examined the antecedents of customer satisfaction based on data collected from the University Polyclinic in Messina (Italy). The study found that physicians' competence and professionalism, nurses' judgment, and the ease of collecting reports positively affect patient satisfaction (Alibrandi et al., 2023). Another study examined patient satisfaction from a psychosocial perspective. The study documents that stereotypes, trust, and humanized perception indirectly (through communication) affect patients' satisfaction. Thus, the study concluded that if a hospital lacks clarity in communication, the above variables would not positively affect patient satisfaction (Wang et al., 2023). Dhakate and Joshi (2023) examined customer satisfaction with online consultation during the COVID era and concluded that consumers value online consultation significantly. The study also noted that doctor behavior and knowledge are important precursors of patient satisfaction. Moreover, the study found that satisfied patients who post positive reviews are important. In a study on health care, Liu et al. (2023) found that informational support is more important for patient satisfaction than emotional support. On the contrary, emotional support has a stronger effect on patient attitude than information support.

Similarly, many studies on patient satisfaction have used different moderators. A study used age as a moderator. The study noted that age positively moderates (i) trust in physicians and trust in hospital admission. Similarly, a study in Nigeria examined the moderating effect of patient satisfaction and concluded that patient satisfaction moderates the relationship between operational efficiency and electronic health records (Gumu, 2023). Another study in Malaysia used trust as a moderating variable

and found that trust moderates the relationship between empathy and satisfaction (Abdullah et al., 2023). To address the above gaps, we have formulated the following research objectives.

1. To examine the effect of family and doctor support, access to health, and patient-perceived empowerment on patient satisfaction.

2. To examine the mediating effect of patient-perceived empowerment on (i) family support and patient satisfaction, (ii) doctor support and patient satisfaction, and (iii) access to health and patient satisfaction.

Literature Review

Patient Satisfaction

Patient satisfaction depends on many factors. It includes clear and empathetic communication (Siebinga et al., 2022), quality of care (Febres-Ramos & Mercado-Rey, 2020), and physical and emotional comfort (Young et al., 2024). Satisfied patients are more likely to experience better health outcomes (Febres-Ramos & Mercado-Rey, 2020) and adhere to treatment plans. Moreover, patient satisfaction enhances the reputation of healthcare providers (Keshtkar et al., 2024). Conversely, low patient satisfaction can result in poor health outcomes, decreased adherence, negative reviews, and increased healthcare costs (Akthar et al., 2023). By prioritizing patient satisfaction, healthcare providers can improve the overall quality of care, patient experience, and outcomes (Mandagi et al., 2024).

Family Support

Family support in patient care encompasses support from family and friends (Powers et al., 2024). It profoundly impacts patient outcomes, satisfaction, and well-being (Febres-Ramos & Mercado-Rey, 2020). There are different categories of family support, including emotional support (Powers et al., 2024), practical support (Siebinga et al., 2022), physical support (Gannedahl et al., 2024), and financial support (Akthar et al., 2023). Emotional support relates to love, trust, and empathy (Powers et al., 2024). Practical support relates to assisting patients in their daily routine, including transportation, meal preparation, and medical management (Young et al., 2024). Physical support includes helping patients with physical care, including bathing, dressing, and mobility (Goodrich & Lazenby, 2023). Financial support relates to helping patients with medical expenses and other financial burdens (Akthar et al., 2023).

Doctor Support

Doctor support is essential for the patient's well-being (Dhakate & Joshi, 2023). It includes emotional support (Siebinga et al., 2022) and informational support (Campos et al., 2024). The doctor provides emotional support through empathetic listening and reassurance (Siebinga et al., 2022). Informational support relates to providing clear explanations of medical treatment (Campos et al., 2024). Researchers believe that doctor support improves patient satisfaction, enhances engagement, and increases trust and loyalty. Moreover, it reduces anxiety and stress, ultimately contributing to a positive and supportive healthcare experience (Mandagi et al., 2024).

Access to Health Care

Access to healthcare refers to the ability of individuals to obtain healthcare services (Chen et al., 2023). It includes various dimensions such as geographic accessibility (Wood et al., 2023), financial accessibility (Akor et al., 2024), timely accessibility (Lee et al., 2024), and cultural accessibility (Habicht et al., 2024). If access to healthcare is available, individuals may avoid difficulties obtaining necessary healthcare services, leading to poor health outcomes and disparities (Akor et al., 2024). Improving access to healthcare is crucial to address these issues as it ensures that everyone receives quality healthcare services without barriers. As a result, it leads to better health outcomes, reduced health disparities, and enhanced overall well-being (Gannedahl et al., 2024).

Patient Perceived Empowerment

Patient empowerment is the process that allows patients to make health-related decisions (Lampus & Wuisan, 2024). Many researchers believe it is a process and an outcome (Keshtkar et al., 2024). Due to internet access, patients gather sufficient knowledge before visiting a doctor. Therefore, they expect doctors to listen to their perspectives regarding the illness (Ali et al., 2024). In developed countries, patient empowerment has become quite common. On the contrary, in developing countries, traditional doctors believe patient empowerment may hinder the patient's medical treatment (Dawood-Khan et al., 2024). However, now things are changing. Now, many doctors in developing countries listen to what the patients have to share about their illnesses and perspectives (Keshtkar et al., 2024).

Hypothesis Development

Family Support and Patient Satisfaction

Family support is essential for patients suffering from chronic diseases, as it enhances their morale (Powers et al., 2024). Goodrich and Lazenby (2023) have noted that the presence of a family member helps patients cope effectively with the illness, leading

to patient satisfaction. Moreover, it reduces patients' negative emotions (Akhtar et al., 2023). Mandagi et al. (2024) emphasize that family involvement during the patient's rehabilitation is crucial for patients. For example, it improves mental and physical health and reduces the gravity of the illness (Febres-Ramos & Mercado-Rey, 2020).

Patients who are uncomfortable, anxious, or uncertain about how to deal with their situation feel secure in the presence of family members (Young et al., 2024). We assert that when patients know their family supports them during their illness, they feel comfortable, resulting in quick recovery (Keshtkar et al., 2024). Many past studies found that family support is an important precursor of patient satisfaction (Goodrich & Lazenby, 2023; Akthar et al., 2023).

H1: Family "support positively affects patient satisfaction."

Doctor Support and Patient Satisfaction

Doctors play a vital role in supporting patients beyond providing medical treatment (Dhakate & Joshi, 2023). There are several ways doctors can support patients (Siebinga et al., 2022). Doctors can emotionally support patients by empathically listening to their concerns (Campos et al., 2024). They can also educate patients on their conditions, treatment, and medications (Young et al., 2024). Moreover, doctors can provide psychological support to patients by offering stress management techniques and coping strategies for chronic conditions (Mandagi et al., 2024). Furthermore, personalized support is also important for patient satisfaction. In personalized support, doctors develop tailored care plans that address patients' needs based on their cultural backgrounds and values (Dhakate & Joshi, 2023). All the above-discussed doctors' support directly and indirectly affects patients' satisfaction.

H2: Doctor "support positively affects patient satisfaction."

Access to Health and Patient Satisfaction

A well-developed healthcare system significantly depends on access to health care (Chen et al., 2023). Besides other factors, patient access to healthcare depends on affordability, availability, and quality of care (Akor et al., 2024). Patient satisfaction besides other factors also depends on clear communication and minimal wait times (Gannedahl et al., 2024). Chen et al. (2024) assert that improving access to health care can enhance its overall quality and effectiveness, leading to better patient health outcomes (Akor et al., 2024). The researcher believes a patient-centered approach addresses these aspects, which are critical for a sustainable and effective healthcare system and patient satisfaction (Gannedahl et al., 2024).

H3: Access to "health positively affects patient satisfaction."

Patient-perceived empowerment and Patient Satisfaction

Patient empowerment allows the patients to take the initiative by sharing their symptoms related to issues with the doctors (Lampus & Wuisan, 2024). Furthermore, patients are more satisfied when doctors allow them to ask questions about treatments and medicine prescriptions (Keshtkar et al., 2024). Researchers also believe patient satisfaction increases when doctors educate patients about their conditions and treatment options (Campos et al., 2024). Similarly, patient satisfaction increases when doctors provide access to medical records and test results (Ali et al., 2024). Multiple studies have concluded that patient-perceived empowerment is linked with positive and improved health outcomes such as cost-effectiveness and quality of life (Dawood-Khan et al., 2024).

H4: Patient-perceived "empowerment positively affects patient Satisfaction."

Family Support, Patient Empowerment, and Satisfaction

A patient's perceived empowerment mediates family support and patient satisfaction (Smolej et al., 2023). When patients feel empowered, they are more likely to receive effective support from their family members, enhancing their satisfaction with care (Keshtkar et al., 2024). Empowerment enables patients to communicate their needs and preferences more effectively, allowing family members to provide tailored support (Dawood-Khan et al., 2024). This support can take many forms, including emotional, practical, and advocacy-based support (Ali et al., 2024). Moreover, patients' satisfaction increases when they receive support that aligns with their needs (Lampus & Wuisan, 2024). Conversely, with low empowerment, patients may not be able to communicate their needs, leading to unmet expectations and decreased satisfaction (Mandagi et al., 2024). By fostering patient empowerment, healthcare providers can strengthen the supportive role of families, ultimately leading to improved patient satisfaction and outcomes (Young et al., 2024).

H5: Patient-perceived empowerment "mediates family's support and patient satisfaction."

Doctor Support, Patient Empowerment, and Patient Satisfaction

Patient-perceived empowerment mediates doctor support and patient satisfaction (Dhakate & Joshi, 2023). When doctors provide supportive care, patients are more likely to feel empowered, enhancing their satisfaction (Siebinga et al., 2022). Doctor support encompasses empathy and encouragement, increasing patient autonomy and confidence (Mandagi et al., 2024). Moreover, empowered patients are better equipped

to manage their health and adhere to treatment plans (Campos et al., 2024). This empowerment fosters a sense of control, promoting higher patient satisfaction (Ali et al., 2024). Conversely, without empowerment, patients may feel passive and dissatisfied (Dawood-Khan et al., 2024).

H6: Patient-perceived empowerment mediates doctor support and patient satisfaction."

Patient Empowerment Access to Health and Patient Satisfaction

Patient empowerment is vital in accessing healthcare and achieving satisfaction (Keshtkar et al., 2024). When patients feel empowered, they are more likely to take an active role in their care, make informed decisions, communicate effectively with healthcare providers, and adhere to treatment plans (Lampus & Wuisan,2024). Empowerment acts as a mediator, increasing health literacy, reducing barriers to care, and promoting self-advocacy (Campos et al., 2024). By empowering patients, healthcare providers can break down barriers, improve patient outcomes, and create a more positive and effective care experience (Keshtkar et al., 2024).

H7: Patient-perceived "empowerment mediates access to healthcare and patient satisfaction."

Conceptual Framework

Figure 1 shows the conceptual framework. It has four direct and three mediating relationships.

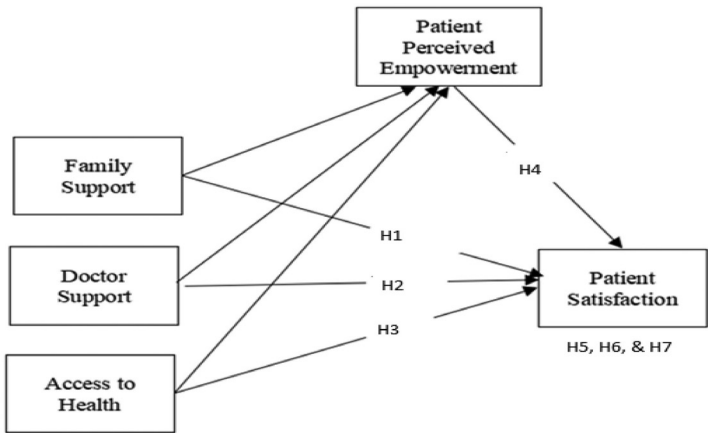


Figure 1: Conceptual Framework

Population and Sample

The study's population includes respondents from every socio-economic class who can read and understand English. The research population consisted of inpatients and

outpatients of tertiary care hospitals in Karachi. The respondents' inclusion criteria include (i) willingness to participate in the survey, (ii) adults who visited a doctor in the last three months. The respondents' exclusion criteria are (i) minors, (ii) have not visited a doctor in the last three months, and (iii) cannot read English.

The study calculated the sample size following Hair Jr et al.'s (2014) suggestions. These researchers suggest selecting five observations for each indicator. The total number of indicator variables in this study is 21. The sample size we came up with was 250 (21 indicators X 10 observations). We distributed 400 questionnaires and received 380.

Scales and Measures

The study used a closed-ended five-point Likert scale with two sections. Section one measures the demographic profile of respondents, and Section two measures all five variables. We generated various questionnaire items from various studies and presented them to medical practitioners, management consultants, and patients. Based on their discussion and feedback, we modified the questionnaire. Table 1 shows constructs, sources, and items.

Table 1: Scale and Measures

Constructs	References	Items
Family Support	Tsoli et al. (2019)	02
Doctor Support	Chiauzzi et al. (2016) and Baker (1999)	05
Access to Healthcare	Small et al.(2013) and Siegel et al. (2019)	04
Patient Perceived Empowerment	Hoseini-Esfidarjani et al.(2021)	05
Patient Satisfaction	Möller-Leimkühler et al. (2002)	05

Statistical Analysis

We used the Smart PLS version 4 for statistical analysis. The first step assessed the quality criteria using a measurement model. In step two, we generated a structural model to test the hypothesized relationships between latent variables.

Demographic Profile

Table 2 depicts the demographic profile: "Gender, age, education, employment status, family income and frequency of doctor visits."

Table 2: Demographic Profile

Category	Sub-Category	Percentage (%)
Gender	Male	35.36%
	Female	64.26%
	Others	0.38%
Age	18-25 years	12.93%
	26-30 years	28.14%
	31-40 years	42.59%
	41-55 years	11.03%
	55 Plus	5.32%
Education	No Education	1.52%
	Primary-Middle Level	0.76%
	Matriculation	2.66%
	Intermediate	7.60%
	Graduation	49.05%
	Post-graduation	38.40%
Employment Status	Salaried	52.85%
	Self Employed	15.59%
	Part-time job	8.74%
	Homemaker/Housewife	21.29%
	Retired	1.52%
Monthly Family Income	Less than 25,000 PKR	4.18%
	25,000- 50,000 PKR	12.93%
	51,000-100,000 PKR	26.99%
	101,000-250,000	27.76%
	251,000-500,000 PKR	15.21%
	501,000+ PKR	12.93%
	Less than 25,000 PKR	4.18%
Doctor's Visits in the Past Year	Every week	1.52%
	Every month	0.76%
	Every 6 months	2.66%
	Once a year	7.60%
	Only when sick	49.05%
	Never	38.40%

Results

Measurement Model

Figure 2 shows the “articulated relationships and β values.”

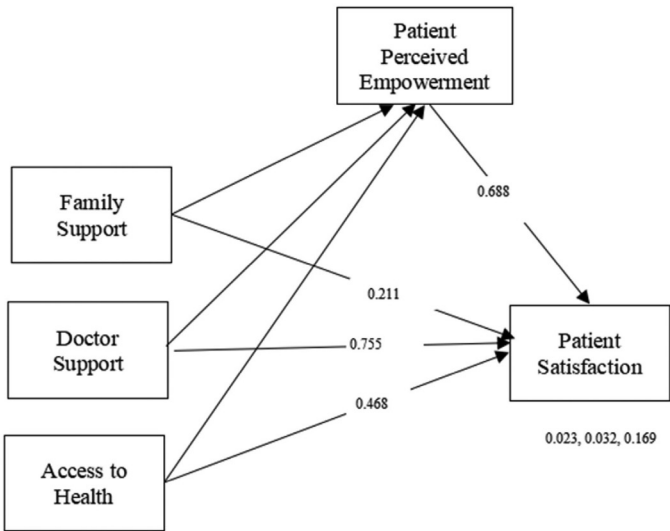


Figure 2 Measurement Model

Convergent Validity

Table 3 depicts Cronbach’s Alpha, composite reliability and AVE values.

Table 3: Convergent Validity

Constructs	Cronbach's Alpha	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Empowerment	0.820	0.875	0.588
Access to Health	0.823	0.876	0.639
Family Support	0.531	0.804	0.674
Doctor Support	0.893	0.922	0.702
Patient Satisfaction	0.938	0.952	0.801

Researchers suggest that for internal consistency, Cronbach’s Alpha and composite reliability values must be at least 0.700, and the AVE values must be at least 0.500. Our results meet these criteria, suggesting the constructs “fulfill the requirement of internal consistency and convergent validity.”

Discriminant Validity

Tables 4 and 5 depict the results related to discriminant validity based on Fornell and Larcker’s (1981) Criterion and Heterotrait-Monotrait (HTMT) methods, respectively. The data in Table 4 shows that the “Square root of AVE values are greater than Pearson Correlation values.” Similarly, Table 5 shows that “HTMT values are greater than 0.85.” These results from both methods suggest that “the constructs employed in the study are unique and distinct.”

Table 4: Discriminant Validity (Fornell & Larcker1981)

Construct	AtH	DS	FS	PPE	PS
Access to Health Care	0.800				
Doctor Support	0.406	0.838			
Family Support	0.249	0.272	0.821		
Patient Perceived Empowerment	0.354	0.659	0.283	0.767	
Patient Satisfaction	0.468	0.755	0.211	0.668	0.895

Table 5: Discriminant Validity (Heterotrait-Monotrait (HTMT)

Constructs	AtH	DS	FS	PPE	PSS
Access to Health Care	-				
Doctor Support	0.426				
Family Support	0.388	0.391			
Patient Perceived Empowerment	0.392	0.758	0.414		
Patient Satisfaction	0.478	0.820	0.207	0.756	-

Structural Model

The structural model presented in Figure 3 shows the association “between latent variables in terms of t values.”The subsequent section shows the hypotheses’ results.

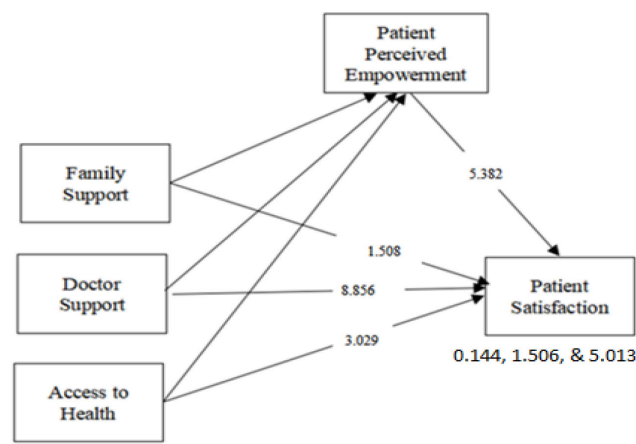


Figure 3: Structural Model

Hypothesis Results

Table 6 shows the results of four direct and three mediating hypotheses.

Table 6: Hypotheses Results

Direct Hypothesis	β	T. Stat	P. Value	Results
Family Support -> P. Satisfaction (H1)	0.211	1.508	0.290	Rejected
Doctor Support -> P. Satisfaction (H2)	0.755	8.856	0.000	Accepted
Access to Health Care -> P. Satisfaction (H3)	0.468	3.029	0.002	Accepted
Patient Perceived Empowerment -> P. Satisfaction (H4)	0.688	5.382	0.001	Accepted
Indirect Hypothesis				
Family Support -> P. Empowerment ->P. Satisfaction (H5)	0.023	0.144	0.000	Rejected
Doctor Support -> P. Empowerment ->P. Satisfaction (H6)	0.032	1.506	0.101	Rejected
Access to Health-> P. Empowerment ->P. Satisfaction (H7)	0.169	5.013	0.001	Accepted

The results support three direct hypotheses (i.e., Hypothesis 2, Hypothesis 3, and Hypothesis 4) but do not support Hypothesis 1. Similarly, our results support one mediating hypothesis (i.e., Hypothesis 7), but they do not support two mediating hypotheses (i.e., Hypotheses 5 and 6).

Discussion and Conclusion

Discussion

We rejected Hypothesis 1 ($\beta=0.211, t=1.508 > 0.05$), stating, “Family support positively

affects patient satisfaction." Family support is essential for patients suffering from chronic diseases, as it helps them recover from illness (Powers et al., 2024). Goodrich and Lazenby (2023) have noted that the presence of a family member helps patients cope effectively with the illness, leading to patient satisfaction. Moreover, it reduces patients' negative emotions (Akhtar et al., 2023). Mandagi et al. (2024) emphasize that family involvement during the patient's rehabilitation is crucial for patients. For example, it improves mental and physical health and reduces disease intensity (Febres-Ramos & Mercado-Rey, 2020).

We accepted Hypothesis 2 ($\beta = 0.755$, $t = 8.856 < 0.05$), which states, "Doctor support positively affects patient satisfaction." There are several ways doctors can support patients (Siebinga et al., 2022). Doctors can emotionally support patients by empathically listening to their concerns (Campos et al., 2024). They can also educate patients on their conditions, treatment, and medications (Young et al., 2024). Moreover, doctors can provide psychological support to patients by offering stress management and coping strategies for chronic conditions (Mandagi et al., 2024). Furthermore, personalized support is also important for patient satisfaction. In personalized support, doctors develop tailored care plans that address patients' needs based on their cultural backgrounds and values (Dhakate & Joshi, 2023).

We accepted Hypothesis 3 ($\beta = 0.468$, $t = 3.029 < 0.05$), which states, "Access to health care positively affects patient satisfaction." A well-developed healthcare system significantly depends on access to health care (Chen et al., 2023). Besides other factors, patient access to healthcare depends on affordability, availability, and quality of care (Akor et al., 2024). Patient satisfaction is equally important and relies on clear communication and minimal wait times (Gannedahl et al., 2024). Chen et al. (2024) assert that improving access to health care can enhance its overall quality and effectiveness, leading to better patient health outcomes (Akor et al., 2024).

We found support for Hypothesis 4 ($\beta = 0.688$, $t = 5.382 < 0.05$), stating, "patient-perceived empowerment positively affects patient satisfaction." Patients are satisfied when doctors allow them to ask questions about treatments and medicine prescriptions (Keshtkar et al., 2024). Researchers also believe patient satisfaction increases when doctors educate patients about their conditions and treatment options (Campos et al., 2024). Similarly, patient satisfaction increases when doctors provide access to medical records and test results (Ali et al., 2024). Multiple studies have concluded that patient-perceived empowerment is linked with positive and improved health outcomes such as cost-effectiveness and quality of life (Dawood-Khan et al., 2024).

We rejected Hypothesis 5 ($\beta = 0.023$, $t = 0.144 > 0.05$), "Patient-perceived empowerment

mediates family support and patient satisfaction. When patients feel empowered, they are more likely to receive effective support from their family members, enhancing their satisfaction with care (Keshtkar et al., 2024). Empowerment enables patients to communicate their needs and preferences more effectively, allowing family members to provide tailored support (Dawood-Khan et al., 2024). This support can take many forms, including emotional, practical, and advocacy-based support (Ali et al., 2024). Patients' satisfaction increases when they receive support that aligns with their needs (Lampus & Wuisan, 2024). Conversely, without empowerment, patients may struggle to communicate their needs, leading to unmet expectations and decreased satisfaction (Mandagi et al., 2024).

We rejected Hypothesis 6 ($\beta = 0.032$, $t = 1.506 > 0.05$), stating, "Patient-perceived empowerment mediates doctor support and patient satisfaction." When doctors provide supportive care, patients are more likely to feel empowered, enhancing their satisfaction (Siebinga et al., 2022). Doctor support encompasses empathy, encouragement, and involvement, leading to increased patient autonomy and confidence (Mandagi et al., 2024). Moreover, doctor support makes patients feel more empowered. As a result, they become better equipped to manage their health, adhere to treatment plans, and navigate the healthcare system (Campos et al., 2024). This empowerment fosters a sense of control, promoting higher patient satisfaction (Ali et al., 2024).

We accepted Hypothesis 7 ($\beta = 0.169$, $t = 5.013 < 0.05$), stating, "Patient-perceived empowerment mediates access to health and patient satisfaction." Patient empowerment is vital in healthcare, mediating between patient access to health services and patient satisfaction (Keshtkar et al., 2024). By empowering patients, healthcare providers can educate them about their conditions, treatment options, and healthcare services, ultimately enabling them to take control of their health and healthcare decisions (Lampus & Wuisan, 2024). This, in turn, can improve patient access to health services by increasing health literacy, enhancing self-care, and facilitating more effective patient-provider communication (Campos et al., 2024). As patients become more empowered, they are more likely to experience increased confidence in their ability to manage their health and make informed decisions about their care (Ali et al., 2024).

Conclusion

Patient satisfaction is important for quick recovery from illness. The study examined the effect of "family support, doctor support, access to health care, and patient-perceived empowerment on patient satisfaction" and the mediating effect of patient-perceived empowerment on patient satisfaction. The study documents that family support insignificantly affects patient satisfaction. However, the study found that

"doctor support, access to health care, and patient-perceived empowerment positively affect patient satisfaction." Regarding the mediating effect, we found that "patient-perceived empowerment mediates access to health care and patient satisfaction." However, the study did not find support for the mediating effect of patient-perceived empowerment on (i) family support and patient satisfaction and (ii) doctor support and patient satisfaction.

Managerial Implication

This study found important antecedents of patient satisfaction, including "family support, doctor support, access to health care and patient-perceived empowerment." We recommend that healthcare policymakers empower patients to choose different treatment plans and involve them in decisions. We recommend that doctors provide support to patients by listening to their points of view and perspectives. Such support helps patients recover from the illness and increase their confidence in the doctors. The patient needs family support. There are different categories of family support, including emotional support (Powers et al., 2024), practical support (Siebinga et al., 2022), physical support (Gannedahl et al., 2024), and financial support (Akthar et al., 2023). All these types of family support individually and collectively affect patient satisfaction. Access to health care is a significant problem in developing countries like Pakistan. Private hospitals are too expensive for most of the population. The number of government hospitals is insufficient to cater to the demands of the patients. They are too crowded, and the doctors cannot give proper time to the patients. Thus, the government should open more government hospitals in all the cities of Pakistan.

Future Research Direction

The study collected data from territorial hospitals in Karachi. Future studies may collect data from the general hospitals of Karachi and other cities. A comparative study between private and government hospitals may bring more insight, which other studies may undertake. The study collected the patients' responses, other studies may obtain the responses from the doctors. We have used perceived patient empowerment as a mediating variable. Future studies may incorporate other mediators in their conceptual framework. The study used four antecedents to measure patient satisfaction. Future studies may incorporate other antecedents such as stereotypes, institutional, trust, and humanized perceptions. We did not use any moderators in our study. Future studies may incorporate variables such as trust, integrity, and age as moderators.

Annexure 1

Constructs and Items Used in the Questionnaire:

Family Support

- FS1. My family is very supportive of any medical-related issue/problem.
FS2. My friends are always supportive.

Doctor’s Support

- DS1. I receive all health information from the doctors in an easy and understandable form.
DS2. My doctor supports me in including my say/opinion in the treatment.
DS3. The doctor discussed my issues with me in detail.
DS4. My doctor gives me enough time during a consultation session.
DS5. My doctor answered all the questions that I had prepared before the visit.

Patient Empowerment

- PE1. I am aware that I can choose different treatment options.
PE2. I know different treatment options for my health problems.
PE3. I have no difficulty in telling my doctor about my concerns and fears, even if he or she does not address them directly.
PE4. I can easily ask questions or express my wishes during a medical consultation.
PE5. If I am given a treatment by my physician that I don’t agree with, I am likely not to take it.

Patient Satisfaction

- PS1. I am totally satisfied with my visit to my doctor
PS2. I feel understood by my doctor.
PS3. I have no complaints about my doctor.
PS4. I understand my illness much better after seeing my doctor.
PS5. I am satisfied with the relationship I have with my healthcare provider.

Access to Healthcare

- ATH1. The healthcare centre provides all the services that I need.
ATG2. The distance from the health centre to my house is appropriate.
ATH3. The time required to reach the health centre is appropriate.
ATH4. Getting to and from the health centre is easy for me.

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Title: Examining the Influence of Product Quality, Pricing, and Service Quality on Customer Satisfaction: Exploring the Moderating Role of Customer Value

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

Examining the influence of Product Quality, Pricing, and Service Quality on Customer Satisfaction: Exploring the Moderating Role of Customer Value

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Abstract

In recent years, consumers in Pakistan have switched to ready-made garments. They are convenient, and the fittings are as per requirement. As a result of this trend, many new garment companies entered the market. The garment industry has become highly competitive and depends on customer satisfaction. Given its importance, we have examined the effect of product quality, product price, and service quality on customer satisfaction and the moderating effect of customer value on customer satisfaction. We collected the data using mall intercept methods. The focus of the study was on the respondents who purchase ready-made garments. The study documents that “product quality, price, and service quality positively affect customer satisfaction.” We also found that customer value moderates (i) Product quality and customer satisfaction, (ii) Product price and customer satisfaction, and (iii) Service quality and customer satisfaction.

Keywords: *Product quality, price, service quality, customer value, customer satisfaction.*

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Introduction

Customers have “certain expectations” when purchasing goods and services. If the delivered “value proposition exceeds their expectations,” they will be highly satisfied (Samuelson, 2021). Researchers believe satisfied customers are more loyal to a firm than non-satisfied customers (Singh et al., 2023). Such customers have a strong repurchase intention and become spokespersons for the products and services (Arkadan et al., 2024). Tedja et al. (2024) assert that customer satisfaction has several dimensions, including “quality, value, timeliness, support, and overall experience.” (Abubakar et al., 2024).

Moreover, satisfied customers generate positive word-of-mouth (Wang & Zakaria, 2024). In contrast, dissatisfied customers generate negative word-of-mouth communication that adversely affects a firm's reputation (Arkadan et al., 2024). Past studies have suggested strategies to increase customer satisfaction (Khan et al., 2023). It includes delivering the value proposition that customers expect (Itzchakov & Wheeler, 2024) and developing an emotional connection with the customers (Weiwei & Tapsai, 2023). By adopting these strategies, firms can develop a loyal customer base, which helps sustain growth and gives them a competitive advantage (Abubakar et al., 2024). Moreover, highly satisfied customers are not price sensitive and they do not switch their loyalty to competitors offering lower prices (Tedja et al., 2024).

Many studies are available on customer satisfaction. Cahaya (2023) examined the effect of “product quality, promotion, and price on satisfaction.” The study documents that “product quality positively affects” customer satisfaction, but promotion and price insignificantly affect it. Another study on customer satisfaction at Papa Ron Pizza documents that store atmosphere, customer experience, facilities, and price positively affect customer satisfaction (Irawan et al., 2023). However, another study on public network services in Vietnam found that variables including “convenience, quality, customer support, promotion, and advertising” positively affect customer satisfaction (Tien & Huong, 2023).

Many studies have used different moderators in different contexts and different countries. A study in Mauritius documents that gender moderates the relationship between environmental quality and customer satisfaction (Teeroovengadum, 2022). The study recommended that service sectors use different strategies for males and females as their perception of satisfaction is different. Another study on the automobile sector in Ghana documents that price fairness moderates the relationship between co-creation and customer satisfaction (Opata et al., 2020). It also found that service convenience moderates the relationship between customer co-creation and satisfaction. Generally,

consumers' perception of service convenience is low; therefore, the study recommends that dealers improve it. Furthermore, the study recommends that auto dealers offer fair prices to customers and ensure they are aware of this.

Given the above gaps, the study has examined the effect of “product quality, product- price, perceived quality on customer satisfaction” and the “moderating effect of customer value” on (i) product quality and customer satisfaction, (ii) price and customer satisfaction, and (iii) perceived quality and customer satisfaction. Perhaps this is the first study that has examined the moderating effect of customer value on the above three relationships.

Review of Literature

Customer Satisfaction

Customer satisfaction is important for sustainability and the growth of an organization. It also gives a firm a competitive advantage (Bhowmick & Seetharaman, 2023). Weiwei and Tapsai (2023) assert that customer satisfaction depends on their experience with goods and services. Conversely, a poor experience with goods and services will make them highly unsatisfied (Wang & Zakaria, 2024). When consumers “purchase a good or service, they have certain expectations” about the value proposition (Day, 2020). If the “delivered value proposition exceeds their expectations, they would be highly satisfied.” Otherwise, their satisfaction level would be low (Arkadan et al., 2024). Researchers stress that successful companies deliver more than they promise (Raji et al., 2024). Moreover, researchers believe that highly satisfied customers are not price-sensitive and do not switch to brands whose prices are comparatively low (Khan et al., 2023). On the contrary, researchers argue that unsatisfied customers switch to other brands and generate negative word-of-mouth communication (Itzchakov & Wheeler, 2024).

Product Quality

Product quality relates to goods and services' features, characteristics, and design (Rajasa et al., 2024). Besides the above factors, some researchers believe that “reliability, functionality, and reparability” are essential product quality features (Isbahi, 2023). Product quality positively affects the customer's buying decisions. Therefore, firms try to align product quality with consumers' needs and demands (De-Giovanni & Zaccour, 2023). Past studies found inconsistent results on the relationship between product quality and purchase decisions. For instance, Wang et al. (2023) found that product quality promotes consumers' purchase decisions. In contrast, Rajasa et al. (2023) found an insignificant association between product quality and purchase decisions.

Product Price

The product price includes all fixed and variable costs for manufacturing goods and services and a margin depending on a firm's pricing strategy (Muneeb et al., 2023). From the customer's perspective, product price depends on what a customer pays for acquiring a good or service (Narayanan & Singh, 2023). Price is an important precursor of customer satisfaction (Lam2023). Consumers tend to compare the prices of products with the same product attributes and select the products that give them optimized monetary and non-monetary benefits (Cahaya et al., 2024). Of the four Ps of marketing, pricing is more critical in developing countries where customers are often highly price-sensitive (Muphimin & Djaddang, 2024).

Service Quality

Services quality is the customer's quality assessment of goods and services (Askari et al., 2024). Service quality depends on what consumers expect and receive regarding services (Sousa et al., 2024). If delivered services exceeded the customers' expectations, their quality perception would increase; otherwise, it would decrease (Mamakou et al., 2024). In the prevailing competitive era, the importance of service quality has increased significantly (Sousa et al., 2024). Moreover, service quality helps firms differentiate their products and gives them a competitive edge (Khan et al., 2024).

Customer Value

Customer value is a multidimensional construct (Du & Tham, 2024). It includes customer's perceived benefits (Vuong et al., 2022), customer cost (Patil & Rane,2023), and satisfaction (Patil & Rane, 2023; Daradkeh et al., 2023). Perceived benefits are the positive outcomes a customer expects from goods and services (Vuong et al., 2022). Customer cost, apart from the monetary cost, also includes time and effort spent by the customers to acquire goods and services (Patil & Rane,2023). Researchers have divided customers' value into three categories: Functional value (Zhang et al., 2023), emotional value (Patil & Rane,2023), and social value (Fuentes et al.,2023). Functional value relates to the tangible aspect of goods and services. It includes quality (Patil & Rane,2023), performance (Rane et al., 2023), and functionality (Jiang & Hong,2023). Emotional value relates to intangible benefits, including joy (Lv et al., 2024), satisfaction (Rasoolimanesh et al., 2024), and prestige (Debby et al., 2024). Social benefits relate to status (Fuentes et al.,2023), recognition (Nobre et al., 2023), and belonging (Zhang et al., 2023).

Hypothesis Development

Product Quality and Customer Satisfaction

Extant studies document that product quality "significantly affects customer

satisfaction." Moreover, it promotes customer loyalty and retention (Maryoso et al., 2023), leading to a firm's success (Cahaya et al., 2024). Maryoso et al. (2023) assert that when the product quality meets customer expectations, they (customers) generate positive word-of-mouth (Munawaroh & Simon, 2023). In contrast, low-quality products adversely affect customer satisfaction, decreasing loyalty and increasing negative reviews (Cahaya et al., 2024). Moreover, a study noted that 70% of consumers prioritize product quality, and the rest, 30%, to other factors such as after-sales services (Salesforces, 2022). Thus, we argue that firms can make informed decisions for growth and success by understanding the critical role of product quality.

H1: Product quality "positively affects customer satisfaction."

Price and Customer Satisfaction

Past studies assert that price significantly affects customer satisfaction and influences their perception of value and quality (Prasilowati et al., 2021). Equipping prices with customers' price and quality perception promotes satisfaction, loyalty, and retention (Hride et al., 2022). In contrast, suboptimal pricing promotes dissatisfaction, overpriced perception, and negative reviews (Tendur et al., 2021). Past studies suggest that 70% of customers consider price while purchasing. At the same time, the remaining 30% of customers are price-sensitive (Spider Group, 2022). Thus, we argue that while setting pricing strategies, firms must set competitive prices, offer transparent pricing, and consider flexible pricing options (Hride et al., 2022). Consumers loyal to a brand may not hesitate to pay a higher price. At the same time, consumers who are not loyal to a brand are often price-sensitive and may switch to other brands that offer lower prices (Cahaya et al., 2024). Thus, we argue that firms based on the target segments must develop the right pricing strategies.

H2: Pricing "positively affects customer satisfaction."

Service Quality and Satisfaction

Past studies noted that service quality is "significantly associated with customer satisfaction" (Prayuda, 2024). A service quality meeting or exceeding customers' expectations will promote satisfaction, loyalty, and retention (Alzaydi, 2024). Satisfied customers share positive experiences that enhance firms' reputation and give them a competitive advantage (Delcourt, 2024). A study on service quality highlights that 60% of customers switch brands if they are not satisfied with the quality of services (Salesforce, 2022). The researchers recommend that to excel in service quality, firms must train their staff, gather customer feedback, and continuously improve service quality (Solin & Curry, 2023).

H3: Service "quality positively affects customer satisfaction."

Product Quality, Customer Value, and Customer Satisfaction

Extant literature documents that customer value "significantly moderates the relationship between product quality and customer satisfaction" (Solin & Curry, 20230). Delcourt (2024) asserts that customer value represents the perceived benefits customers derive from a product or service. Moreover, customer value enhances the relationship between product quality and satisfaction and mitigates the negative effect of low product quality (Gani & Oroh, 2021). A past study noted that 65% of customers focus on the functional value of a product and the remaining 35% on other aspects, such as emotional and social values. The study also highlighted that customer value enhances customer satisfaction by 30%. On the other hand, 70% of the customers switch brands due to perceived low value (Salesforce, 2022). Thus, by understanding customer value, we argue that firms can create products and services that meet customers' needs and increase satisfaction (Cahaya et al., 2024).

H4: Customer value "moderates the relationship between product quality and customer satisfaction."

Price, Customer Value and Customer Satisfaction

Customer value "significantly moderates price and customer satisfaction" (Prasilowati et al., 2021). Consumers' perception of high-value products makes them less price-sensitive, leading to increased satisfaction (Hride et al., 2022). In contrast, customers' low perception of product value increases price sensitivity, decreasing satisfaction (Cahaya et al., 2024). A past study on customer value documents that 75% of customers prefer value over price (Hride et al., 2022). Moreover, the discussed study noted that customers stay with high-value products despite price increases (Salesforce, 2022). Thus, we argue that firms can optimize pricing and decrease price sensitivity by understanding the moderating role of customer value on product price and customer satisfaction. Moreover, these strategies will increase loyalty and satisfaction (Spider Group, 2022).

H5: Customer value "moderates the relationship between price and customer satisfaction."

Service Quality, Customer Value, and Customer Satisfaction

Extant literature documents that "customer value significantly moderates service quality and patient satisfaction" (Prayuda, 2024). Alzaydi (2024) asserts that customer value helps customers understand how it affects service quality and satisfaction. Moreover, high customer value enhances effect size between service quality and satisfaction relationship (Delcourt, 2024). In contrast, low customer value decrease the

affect size between service quality and customer satisfaction relationship (Solin & Curry, 2023). Thus, we argue that firms can optimize service quality by understanding the moderating relationship between service quality and satisfaction (Spider Group, 2022). Moreover, this understanding can help firms provide consistent service quality and increase customer satisfaction (Hride et al., 2022).

H6: Customer value “moderates service quality and customer satisfaction.”

Conceptual Framework

The study has built upon the conceptual framework of Kartikasari and Albari (2019) and introduced a new model. Figure 1 illustrates that the model contains three direct and three moderating relationships.”

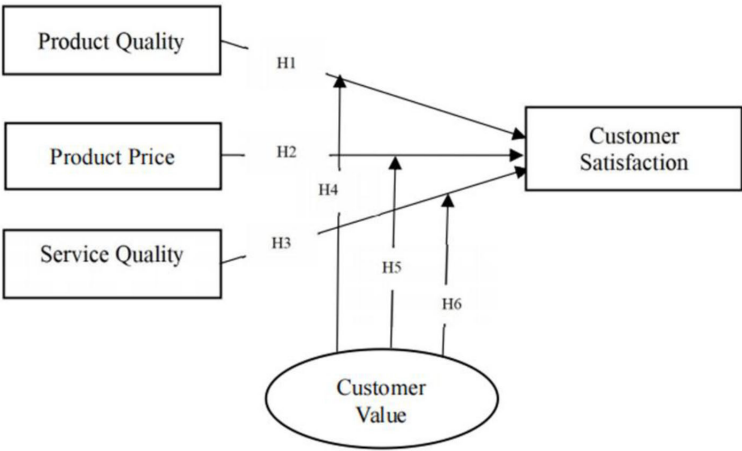


Figure 1: Conceptual Framework

Methodology

Type of Research

There are primarily two categories of research. Exploratory and explanatory. Exploratory research helps researchers identify and solve the exact nature of the problem in a study (Sekaran & Bougie, 2020). Explanatory research helps researchers obtain in-depth findings and thoroughly explains the topic under study (Cooper & Schindler, 2020). Moreover, it evaluates the effects of predictor variables on the dependent variable (Sekaran & Bougie, 2020). This study used explanatory as it examined the effects of predictor variables on the dependent variable. Moreover, it adopted a deductive approach (Cooper & Schindler, 2020). Initially, we developed a theory (model) based

on the literature review. Then, we empirically tested the envisaged relationships of the model by collecting data from the target audience using a pre-developed questionnaire (Sekaran & Bougie, 2020).

Research Population and Sample Size

The research population comprises the users of clothing brands residing in Karachi. Karachi represents Pakistan, as all ethnic populations reside in this city. We have “selected the textile sector because it significantly contributes to the country’s GDP and generates employment.

Different techniques for calculating the minimum sample size are available.” For “example, Sekaran and Bougie (2020) suggest a sample of 30” for each construct in a study. Additionally, the Rao Soft Web page calculates the sample size based on the population and margin of error. Using “Rao Soft, we found that a sample size of 387 would be appropriate” for this study. However, we collected a sample of 435 to increase the generalizability of the study. We used the mall intercept method to collect the sample. We visited the top four shopping malls in Karachi on different days and times.

Data Analysis

The “study has used Smart PLs version 4 for statistical analysis.” Unlike other statistical software, Smart PLS is convenient to use and regresses all the relationships simultaneously. The statistical analyses included in the study are “reliability, validity, discriminant validity, and hypothesis results.”

Scales and Measures

Table 1 “depicts the constructs, items used in the study, and their sources.”

Table 1: Scales and Measures

Constructs	Sources	Number of Items
Product Quality	Mahsyar and Surapati(2020)	5
Product Price	Alzoubi and Inairat (2020)	4
Service Quality	Mahsyar and Surapati (2020)	6
Customer Value	Abadi, Nursyamsi and Syamsuddin (2020)	4
Customer Satisfaction	Mahsyar and Surapati (2020)	4

Respondent Profile

Table 2 presents the respondents' profiles “regarding gender, age, educational level, marital status, and income level.”

Table 2 Demographic Profiles

Demographic		Percentage
Gender	Male	45%
	Female	55%
Age	20-30 years	27%
	30-40-years	59%
	40-50 years	11%
	Above 50 years	3.%
Education level	Martic	8%
	Inter	45%
	Bachelors	35%
	Master	12%
Martial Status	Single	43%
	Married	57%
Income	Up to Rs.50,000	13%
	Rs.51,000 to Rs.100,000	40%
	Rs. 101,000 to Rs.150,000	20%
	Rs.151,000 to Rs.200,000	17%
	Rs.200,000 Plus	10%

Measurement Model

Figure 2 depicts the measurement model, showing the “ β values of all the constructs” used in the study. The “results show that the strongest effect” is in Hypothesis 6 ($\beta=0.662$), which states that customer value moderates service quality and customer satisfaction. The lowest effect is in Hypothesis 4 ($\beta=0.075$), which states that customers value moderate product quality and customer satisfaction.

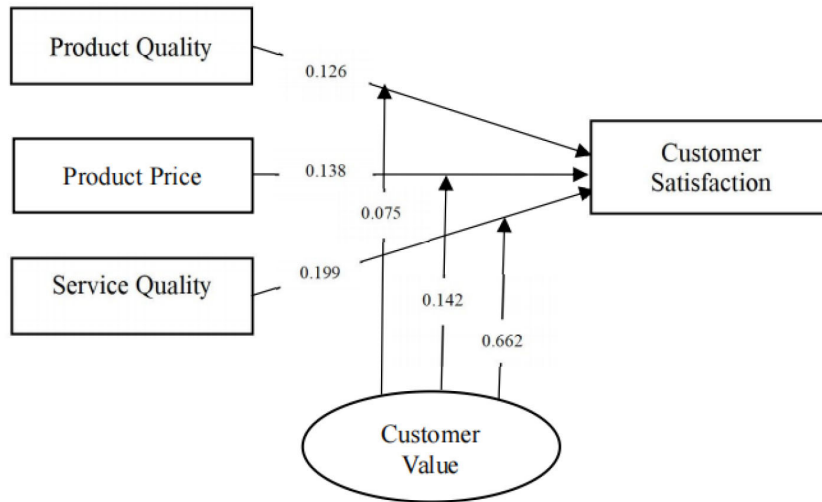


Figure 2 Measurement Model

Descriptive Analysis

Table 3 “depicts statistics related to mean, standard deviation, skewness, kurtosis, and Cronbach’s Alpha values.”

Table 3: Descriptive Statistics

Construct	Mean	St. Dev	Skewness	Kurtosis	Cronbach’s Alpha
Product Quality	3.750	2.203	1.492	1.407	0.848
Product Price	4.043	1.818	-1.336	1.571	0.807
Service Quality	3.870	1.355	-2.213	-1.507	0.889
Customer Value	4.092	2.631	1.150	-1.387	0.856
Customer Satisfaction	4.109	2.125	2.665	1.487	0.849

We found that the “skewness value ranged” between 1.150 and 2.665. Similarly, the “kurtosis values ranged between 1.387 and 1.571,” suggesting “acceptable univariate normality” of the constructs. Moreover, we found that the “constructs used in the study also have acceptable internal consistency” since all Cronbach’s Alpha values ranged between 0.807 and 0.899.

Convergent Validity

Table 4 depicts the “values related to composite reliability, average variance extracted, and the number of items used in each construct.” The results show “that the highest composite reliability (CR=0.898)” is for customer value, and the lowest composite reliability (CR=0.862) is for product quality. Similarly, we found the highest AVE (0.931) for

service quality and the lowest AVE (0.624) is for customer satisfaction. Thus, it suggests that the “constructs have acceptable convergent validity.

Table 4: Convergent Validity

Construct	CR	AVE	No of items
Product Quality	0.862	0.865	5
Product Price	0.873	0.633	4
Service Quality	0.891	0.931	6
Customer Value	0.898	0.639	4
Customer Satisfaction	0.892	0.624	4

Discriminant Validity (HTMT Ratio)

Table 5 shows the results related to discriminant validity. Based on these results, we have concluded that the constructs used in the study “are unique and distinct” since all HTMT ratio values are less than 0.950.

Table 5: Discriminant Validity (HTMT Ratio)

	PQ	PP	SQ	CV	CS
Product Quality	0.736				
Product Price	0.322	0.634			
Service Quality	0.452	0.564	0.428		
Customer Value	0.178	0.153	0.096	0.054	
Customer Satisfaction	0.463	0.58	0.333	0.287	0.105

Hypothesis Results

Table 6 shows the results of the articulated hypothesis in terms of “the Beta, t, and p values.”

Hypotheses	Beta	t stat.	p values	Results
P. Quality -> C. Satisfaction (H1)	0.126	2.445	0.015	Accepted
P. Price -> C. Satisfaction (H2)	0.138	1.994	0.046	Accepted
Service Quality -> C. Satisfaction(H3)	0.199	3.182	0.001	Accepted
P. Quality *C. Value -> C. Satisfaction (H4)	0.075	1.998	0.046	Accepted
P. Price *C. Value -> C. Satisfaction (H5)	0.142	2.785	0.006	Accepted
Service Quality* C. Value -> C. Satisfaction (H6)	0.662	20.512	0.000	Accepted

The “results show that the highest effect” is for Hypothesis 6 ($\beta = 0.662$), followed by Hypothesis 3 ($\beta = 0.199$), Hypothesis 5 ($\beta = 0.142$), Hypothesis 2 ($\beta = 0.138$), Hypothesis 1 ($\beta = 0.126$), and Hypothesis 4 ($\beta = 0.075$).

Structural Model

Figure 3 depicts the structural model, “showing the relationship between latent variables in terms of t values.”

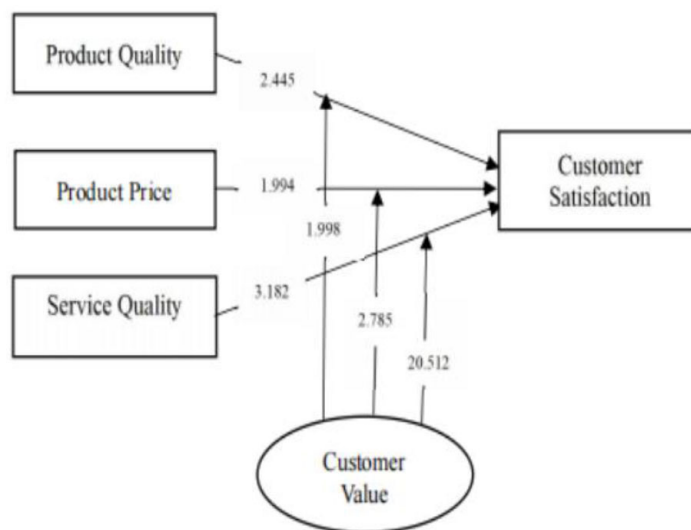


Figure 3: Structural Model

Discussion and Conclusion

Discussion

We accepted “Hypothesis 1: Product quality positively affects customer satisfaction.” Extant studies document that product quality “significantly affects customer satisfaction.” Moreover, it promotes customer loyalty and retention (Maryoso et al., 2023), leading to a firm's success (Cahaya et al., 2024). Maryoso et al. (2023) assert that when the product quality meets customer expectations, they (customers) generate positive word-of-mouth (Munawaroh & Simon, 2023). In contrast, low-quality products adversely affect customer satisfaction, decreasing loyalty and increasing negative reviews (Cahaya et al., 2024). Moreover, a study noted that 70% of consumers prioritize product quality, and the rest, 30%, to other factors such as after-sales services (Salesforces, 2022). Thus, we argue that firms can make informed decisions for growth and success by understanding the critical role of product quality.

Our “results support Hypothesis 2: Product price positively affects customer satisfaction.” Past studies assert that price significantly affects customer satisfaction and influences their perception of value and quality (Prasilowati et al., 2021). Equipping prices with customers' price and quality perception promotes satisfaction, loyalty, and

retention (Hride et al., 2022). In contrast, suboptimal pricing promotes dissatisfaction, overpriced perception, and negative reviews (Tendur et al., 2021). Past studies suggest that 70% of customers consider price while purchasing. At the same time, the remaining 30% of customers are quality conscious (Spider Group, 2022). Thus, we argue that while setting pricing strategies, firms must set competitive prices, offer transparent pricing, and consider flexible pricing options (Hride et al., 2022). Consumers loyal to a brand may not hesitate to pay a higher price. At the same time, consumers who are not loyal to a brand are often price-sensitive and may switch to other brands that offer lower prices (Cahaya et al., 2024).

We found “support for Hypothesis 3: stating service quality positively affects customer satisfaction”. Past studies noted that service quality is “significantly associated with customer satisfaction” (Prayuda, 2024). A service quality meeting or exceeding customers’ expectations will promote satisfaction, loyalty, and retention (Alzaydi, 2024). Satisfied customers share positive experiences that enhance firms’ reputation and give them a competitive advantage (Delcourt, 2024). A study on service quality highlights that 60% of customers switch brands if they are not satisfied with the quality of services (Salesforce, 2022). The researchers recommend that to excel in service quality, firms must train their staff, gather customers' feedback, and continuously improve service quality (Solin & Curry, 2023).

Our results “support Hypothesis 4: Customer value moderates the relationship between product quality and customer satisfaction.” Extant literature documents that customer value “significantly moderates the relationship between product quality and customer satisfaction” (Solin & Curry, 2023). Delcourt (2024) asserts that customer value represents the perceived benefits customers derive from a product or service. Moreover, customer value enhances the relationship between product quality and satisfaction and mitigates the negative effect of low product quality (Gani & Oroh, 2021). A past study noted that 65% of customers focus on the functional value of a product and the remaining 35% on other aspects, such as emotional and social values. The study also highlighted that customer value enhances customer satisfaction by 30%. On the other hand, 70% of the customers switch brands due to perceived low value (Salesforce, 2022).

We found “support for Hypothesis 5: Customer value moderates the relationship between product price and customer satisfaction.” Customer value “significantly moderates price and customer satisfaction” (Prasilowati et al., 2021). Consumers' perception of high-value products makes them less price-sensitive, leading to increased satisfaction (Hride et al., 2022). In contrast, customers’ low perception of product value increases price sensitivity, decreasing satisfaction (Cahaya et al., 2024). A past study on

customer value documents that 75% of customers prefer value over price (Hride et al., 2022; Salesforces, 2022). Moreover, the discussed study noted that customers stay with high-value products despite price increases (Salesforce, 2022). Thus, we argue that firms can optimize pricing and decrease price sensitivity by understanding the moderating role of customer value on product price and customer satisfaction. Moreover, these strategies will increase loyalty and satisfaction (Spider Group, 2022).

The “study supported Hypothesis 6: Customer value moderates the relationship between service quality and customer satisfaction.” Extant literature documents that “customer value significantly moderates service quality and patient satisfaction” (Prayuda, 2024). Alzaydi (2024) asserts that customer value helps customers understand how it affects service quality and satisfaction. Moreover, high customer value enhances service quality and satisfaction (Delcourt, 2024). In contrast, low customer value negatively affects this relationship (Solin & Curry, 2023). Thus, we argue that firms can optimize service quality by understanding the moderating relationship between service quality and satisfaction (Spider Group, 2022). Moreover, this understanding can help firms provide consistent service quality and increase customer satisfaction (Hride et al., 2022).

Conclusion

Customer satisfaction is important for a firm's growth and sustainability. Firms that do not keep their customers satisfied and happy may not survive in the long run. Given its importance, we have examined the effect of product quality, product price, and service quality” on customer satisfaction and the moderating effect of customer value on customer satisfaction. We collected the data using mall intercept methods. The focus of the study was on the respondents who purchase ready-made garments. The study documents that “product quality, price, and service quality positively affect customer satisfaction.” We also found that customer value moderates (i) Product quality and customer satisfaction, (ii) Product price and customer satisfaction, and (iii) Service quality and customer satisfaction.

Implications

We recommend that firms focus on product quality. It promotes customer loyalty and competitiveness (Rajasa et al., 2024). Moreover, quality products allow the firms to differentiate from the competitors (Isbahi, 2023). Most researchers agree that high-quality products allow firms to charge maximum prices for the products (Wang et al., 2023), promoting sustainability and increasing market share (Firtikiadis et al., 2024). In contrast, poor quality harms the brand reputation and reduces customer satisfaction,

reducing sales (Wang et al., 2023).

We recommend that firms focus on product pricing. Product pricing promotes consumer buying, increased revenue, and firms' competitiveness (Muneeb et al., 2023). Moreover, while developing a pricing strategy, firms may focus on target audience, market conditions, and competition (Narayanan & Singh, 2023). A well-developed pricing strategy increases sustainable customer relationships and allows the firm to differentiate its products from competitors (Muphimin & Djaddang, 2024).

Our study recommends that firms also focus on service quality. Like the other four Ps of marketing, service quality promotes customer satisfaction, revenue, and loyalty (Askari et al., 2024). Firms with high service quality command premium pricing, which allows firms to differentiate from competitors and increase market share (Mamakou et al., 2024). In contrast, poor service quality damages firms' reputations, leading to low revenue and increasing customer complaints (Khan et al., 2024).

Limitations and Future Research

The "study has focused on Karachi's textile sector. Other studies may focus on other sectors." A comparative study "between service and non-service sectors may bring more insight into the phenomenon." The study has examined the direct impact of three variables (i.e., product quality, price, and service quality) on customers' satisfaction. Future studies may add more antecedents to customer satisfaction in their conceptual framework. Our study was quantitative. Others may opt for qualitative or mixed methodology. The study has used customer value as a moderator in its conceptual framework. Other studies may add more moderators to their conceptual framework, such as in social media and demographics.

Annexure 1

Constructs and Items Used in the Study

Product Quality

- PQ1. I am highly satisfied with the performance of the brand I use.
- PQ2. The brand I use is known for its reliability.
- PQ3. The brand I use has high durability.
- PQ4. The brand I use offers distinguished features.
- PQ5. I am satisfied with the brand I use.

Price

- P1. The price of the brand I use is adequate.
- P2. The price of the brand I use is lower than that of a similar product in the market.
- P3. Considering its features, the price of the brand I use is justified.
- P4. The price of the brand I use is mostly the same.

Customer Value

- CV1. The brand I use offers good value for the money.
- CV2. The brand I use offers a higher value than its price.
- CV3. I would not switch my brand even if other brands offered lower prices.
- CV4. The brand always delivers what it promises.

Customer Satisfaction

- CS1. I am highly satisfied with the quality of the brand I use.
- CS2. I would always recommend that others use the brand I use.
- CS3. The brand I use meets my expectations.
- CS4. I am satisfied with the after-sales service of the brand I use.

Service Quality

- SQ1. I am highly satisfied with the service of the brand I use.
- SQ2. The customer support of the brand I use is highly cooperative.
- SQ3. The brand I use delivers the goods on time.
- SQ4. The service department of the brand I use has clarity in its communication.
- SQ5. The staff of the brand I use are highly courteous.
- SQ6. The staff of the brand I use are highly empathic.

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

Antecedents to attitudes toward Green buying and the Moderating Role of Green Efficacy

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Abstract

Compared to developed countries, environmental concerns in Pakistan are increasing slowly. Besides other factors, "social norms (SNs) and cultural values (CVs)" have significantly affected attitudes toward green buying (ATGB). However, by extending the "Theory of Planned Behavior," we developed five direct and two moderating hypotheses." We "focused on the textile sector as "it significantly contributes towards employment generation and GDP." The "study found that perceived behavior control (PBC) and collectivism (CLT) positively affect attitudes towards green buying." The study also documents that "social norms (SNs) negatively affect attitude towards green buying. Its direction is negative, contrary to the envisaged positive relationship. Individualism (IND) insignificantly affects attitudes towards green buying." Moreover, it documents that attitude towards green buying positively affects green purchase intention (GPI)." Regarding moderating relationships, we found "green efficacy moderates (i) individualism (IND) and attitudes towards green buying (ATGB), and (ii) collectivism (CLT) and attitude towards green buying (ATGB).

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Keywords: *Green purchase intention, attitudes toward green buying, individualism and collectivism, green efficacy, and Theory of Planned behavior.*

Introduction

Past literature on sustainable products emphasizes the importance of green attitudes and purchase intention, which cannot be overstated (Ng et al., 2024). Moreover, researchers argue that it is essential to create an environment of conservation by reducing carbon footprint, conserving natural resources, and minimizing waste (Sharma et al., 2023; Ng et al., 2024). Ali et al. (2023) assert that such an environment motivates businesses to adopt sustainability practices, an essential precursor to a sustainable environment. Furthermore, adopting sustainable practices allows firms to develop innovative green products. As a result, firms achieve sustainable growth and a “competitive advantage” (Akram et al., 2024). A high Green purchase attitude in a country has several benefits. It promotes a sustainable environment and significantly increases consumer awareness towards environmentally friendly products (Ali et al., 2023). Moreover, it increases the demand for environmentally friendly products. As a response, firms market new innovative green products that contribute to economic growth and development. Based on the above discussions, we argue that firms that do not adopt sustainable practices may not survive (Sharma et al., 2023). We also assert that firms can enhance their reputations by adopting corporate social responsibility (Akram et al., 2024).

In Pakistan, consumers' attitudes toward green buying (ATGB) are not encouraging compared to developed countries (Sharma et al., 2023). Many factors have contributed to this attitude. For example, due to low demand, firms are not producing green products (Ali et al., 2023). Therefore, the prices of green products are significantly higher than conventional products (Rasheed et al., 2024). Furthermore, the perception of Pakistani consumers (Sharma et al., 2023) is that the quality of green products is “inferior to conventional products.” Apart from other challenges, the policymakers in Pakistan must focus on changing consumers' attitudes toward green products. This will promote “green purchase intention and green buying behavior.” Given the above discussions, the study has examined:

1. The impact of “social norms (SNs), perceived behavior (PB) individualism (IND) and collectivism (CLT) on attitude towards green buying (ATGB).”
2. The effect of attitude towards green buying behavior (ATGB) on green purchase intention (GPI).

3. The moderating “effect of green efficacy between green individualism (IND) and attitude toward green buying (ATGB) and (ii) green collectivism (CLT) and attitude towards green attitude (ATGB).”

Literature Review

Theoretical Undergrouding

Many past studies have used the Theory of Planned Behavior in different domains, including green products. The theory postulates, “Green subjective norms (GSN) and green perceived behavior control (GPBC) promote consumers' green attitudes (GAs)” (Tunji-Olayeni et al., 2024). Moreover, studies also assert that green “subjective norms (GSN), green attitudes (GA),” and green behavior control (GBC) “affect green purchase intention (GPI) and green buying behavior (GBB)” (Gansser & Reich, 2023). Green buying behavior (GBB) is consumers’ actual green buying behavior (GBB) that depends on green purchase intention (GPI) (Buhmann et al., 2024). Green purchase intention (GPI) is consumers’ intention to buy green products shortly (Asif et al., 2023). Green attitudes (GA) are a consumer's long-term perception of sustainable products, which significantly depends on many factors, including cultural and social values (Kamalanon et al., 2022). Green subjective norms (GSN) significantly depend on green culture, family, and peers' attitudes toward sustainable products (SPS) (Girish et al., 2024). Besides other challenges, marketers' biggest challenge is ensuring that “green purchase intention (GPI) translates into green buying behavior (GBB)” (Ogiemwonyi et al., 2022).

Conceptual Framework

A conceptual framework shows all the envisaged relationships. The “conceptual framework presented in Figure 1 shows it has five direct and two moderating relationships.”

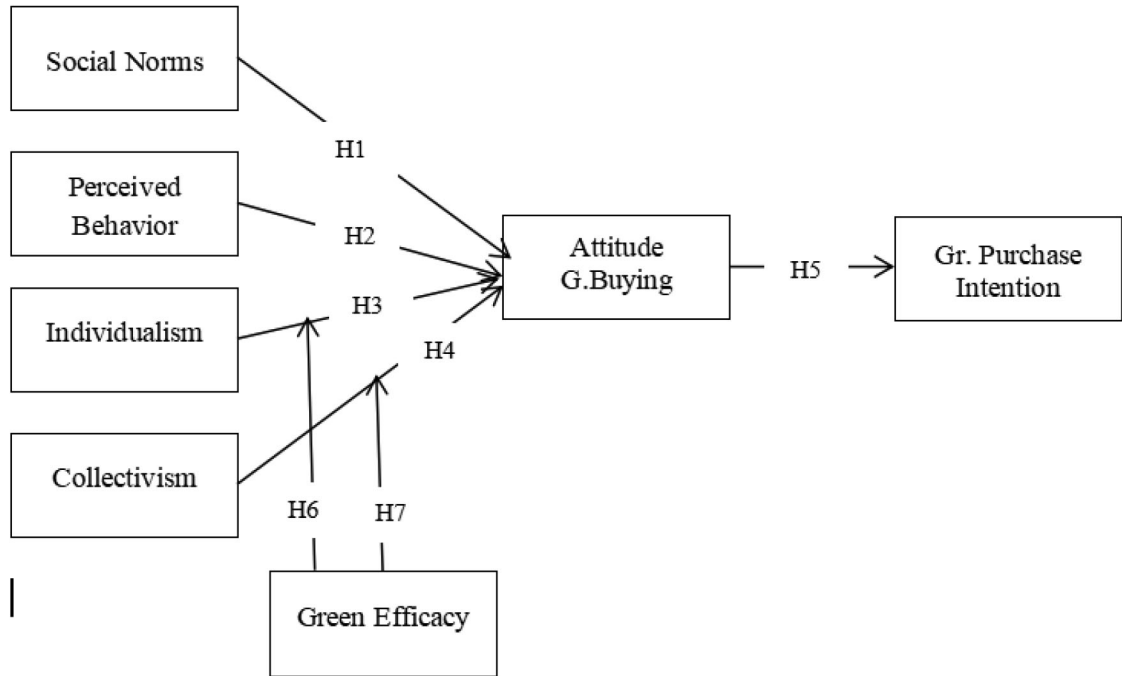


Figure 1: Conceptual Framework

Green Purchase Intention in the Context of Pakistan

According to Akram et al. (2024), green purchase intention (GPI) is “consumers' intention (CI) of buying sustainable goods and services shortly.” In Pakistan, consumers' green purchase intention (GPI) compared to other countries is low (Rasheed et al., 2024). Marwat (2023) asserts that, besides other factors, low education levels and economic conditions have contributed to low green purchase intention (GPI) in Pakistan (Mahasan et al., 2024). Moreover, researchers believe that if consumers' friends and families have positive attitudes toward sustainable products, they would also have positive attitudes toward green purchase intention (GPI) (Salam et al., 2022). On the other hand, if consumers' families and friends have poor attitudes toward sustainable products, they would have negative attitudes towards green purchase intention (GPI) (Iqbal et al., 2023). Past studies document that Pakistan's cultural and social values are not very positive towards environmentally friendly products (Tariq & Gill, 2024). As a result, Pakistani consumer green purchase intention is low (Mahasan et al., 2024).

Attitude towards Green Buying Behavior in the Context of Pakistan

Attitude toward green buying (AGB) is consumers' long-term mindset about sustainable products (SPs) (Channa et al., 2022). Many antecedents to attitude toward

green buying (AGB) exist, including religiosity and social values (Shah et al., 2022). Extant literature documents that Pakistani consumers have become more concerned about environmental sustainability in recent years (Channa et al., 2022). Studies also cite that young Pakistani consumers are more concerned about environmental sustainability than older ones (Jabeen et al., 2023). Supporting this citation, we believe the young generation interacts with consumers worldwide whose perception of being environmentally friendly is high (Iqbal et al., 2023). Moreover, the young generation in Pakistan, compared to the old generation, is more accepting of new ideas (Channa et al., 2022). Furthermore, we believe that policymakers in Pakistan focus on enhancing the educational level and economic conditions to increase attitudes toward green buying (ATGB) (Shah et al., 2022; Rasheed et al., 2024).

Social Norms in the Context of Pakistan

Social norms (SNs) are an essential predictor of consumers' attitudes and behavior (Abbas et al., 2024). Besides other factors, families, peers, and friends are sub-dimensions of social norms (SNs) (Raza & Farrukh, 2023). The effect of social norms (SNs) on attitudes and behaviors is inconsistent in all cultures. Its effect is more significant in a dualistic culture like Pakistan than in an individualistic one (Jabeen & Khan, 2022). Consumers adopt a sustainability environment attitude if their social norms (SNs) support it (Asif et al., 2023). Studies cite that in countries like Pakistan, consumers have a low attitude toward green buying (ATGB) because their social norms (SNs) do not support environmentally friendly behavior (Rasheed et al., 2024). Similarly, we argue that those consumers adopt environmentally sustainable behavior whose families and friends support it (Majeed et al., 2022). We also believe that social norms (SNs) do not change quickly. Therefore, the policymakers of Pakistan, in order to align the social norms (SNs) with green behavior, must develop long-term policies. It may include collaborating with influential group members and educational and social institutions (Abbas et al., 2024).

Perceived Behavior Control in the Context of Pakistan

Perceived behavior control (PBS) in the context of green sustainability enables individuals to adopt green sustainability (Hassan et al., 2024). Individuals in Pakistan with strong perceived control behavior (PCB) and a higher inclination towards sustainable products would go out of their way to buy green products (Abbas et al., 2024). They would not worry about the higher cost of such products and may search where they are available (Raza & Farrukh, 2023). In contrast, individuals with low perceived behavior control (PBC) would buy environmentally friendly products if they were readily available at affordable prices (Majeed et al., 2022). Extending the above discussions, we argue that individuals with high perceived behavior control (PBC) and a higher inclination toward sustainable environments would form their green buying decisions based on

their values, irrespective of the values of family and friends (Abbas et al., 2024).

Individualism

In contrast to collectivists (CLTs), individualists (INDs) focus on their "freedom, autonomy, and self-expression" (Abbas et al., 2024). When buying conventional or green products, individualists are not concerned about their families and friends' attitudes (Majeed et al., 2022). Individualists can have a positive or negative attitude toward environmentally friendly products (Lin et al., 2023). Thus, if individualists are strongly inclined towards a sustainable environment, they would develop positive attitudes towards sustainable products (Afridi et al., 2024), irrespective of the perception of their families and friends (Latif et al., 2022). On the other hand, if individualists do not value a sustainable environment, they would develop negative attitudes towards environmentally friendly products (Shah et al., 2024). In Pakistan or the world over, individualists may not purchase environmentally friendly products as they prioritize price, conveniences, and personal benefits over environmental sustainability (Raza & Farrukh, 2023).

Collectivism

In contrast to individualists (INDs), collectivists (CLTs) promote group harmony, interdependence, and collective well-being over individual interests (Majeed & Rasheed, 2024). Thus, collectivists in a society align their decisions with the social values of the society and friends (Ur-Rahman et al., 2023). Thus, if collectivists find conflicts in their decisions and the values of society and family, they would sacrifice their decisions (Saqib et al., 2024). In the context of sustainable products, studies highlighted that collectivists, irrespective of their values, would adopt sustainable behavior if the society believes in it (Khan et al., 2024). On the other hand, despite their strong belief in sustainable products, collectivists would not buy them if they conflict with society and family norms (Majeed & Rasheed, 2024).

Green Efficacy

Green efficacy is individuals' belief in contributing to a sustainable environment (Nisar et al., 2024). Thus, when consumers in Pakistan feel their choices can make a difference in society, they adopt green, sustainable practices (Anwar et al., 2022). Extending these discussions, we argue that individuals with green efficacy believe that adopting sustainable environmental practices would motivate others to adopt the same. They also believe it would have a ripple effect leading to widespread positive change toward green sustainability (Hafeez et al., 2024).

Hypothesis Development

Social Norms and Attitude Towards Green Buying

Extant literature documents that when individuals' families and friends have a positive attitude towards green buying (ATGB), they adopt the same behavior (Rasheed et al., 2024). In this context, Salam et al. (2022) highlighted that social norms (SNs) aligned with sustainable practices can override individuals' preferences, leading to positive attitudes towards green buying (ATGB) (Asif et al., 2023). However, social norms (SNs) in collective societies like Pakistan shape consumers' attitudes toward green buying (ATGB) (Mansoor et al., 2022). Thus, we argue that if the social norms (SNs) of society align with sustainable practices, it will motivate consumers to have positive attitudes toward green buying (ATGB) (Shah et al., 2024). On the other hand, if the social norms (SNs) of society contradict sustainable environmental practices, it will discourage consumers from having a positive attitude toward green buying (ATGB) (Channa et al., 2022).

H1: Social norms (SNs) "positively affect attitude toward green buying (ATGB)."

Perceived Behavior and Attitude towards Green Buying

Researchers argue that perceived behavior control (PBC) refers to consumers' ability to control their behavior in the context of green and conventional products (Hassan et al., 2024). Thus, when consumers control their choices, they may adopt a positive or negative attitude toward green buying (Asif et al., 2023). These negative or positive attitudes depend on their social orientation toward sustainable practices (Majeed et al., 2022). Individuals with a high orientation towards green practices would develop positive attitudes toward green buying (ATGB) (Raza & Farrukh, 2023). In contrast, individuals with a low orientation towards green practices would develop negative attitudes toward green buying (ATGB) (Asif et al., 2023).

H2: Perceived behavior (PB) "positively affects attitudes toward green buying (ATGB)."

Individualism and Attitude towards Green Buying

Like Pakistan, all countries, despite being collectivists or individualists, have segments of individualists and collectivists (Rasheed et al., 2024). Raza & Farrukh (2023) assert that the individualist segment in Pakistan prefers their benefits and autonomy (Shah et al., 2024). If they feel that green products are not beneficial, they will develop negative attitudes toward green buying (ATGB) (Salam et al., 2022). In contrast, individualists in Pakistan may have a positive attitude toward green buying (ATGB) if they believe they may benefit from improved health and increased social status (Asif et al., 2023).

H3: Individualism (IND) “positively affects attitudes toward green buying (ATGB).”

Collectivism and Green Buying Behavior

Researchers have categorized Pakistan as a collectivist society (Majeed & Rasheed, 2024). Thus, most individuals in this country sacrifice their personal goals and ambitions to align with society and family values (Qureshi et al., 2023). Thus, when individuals believe that society and families support green practices, they adopt positive attitudes toward green buying (ATGB) (Zahra et al., 2022). However, “when individuals believe their society and family” do not support sustainable practices, they adopt a negative attitude towards green buying (ATGB) (Farooqi & Frooghi, 2024).

H4: Collectivism (CLT) “positively affects attitudes toward green buying (ATGB).”

Attitude towards Green Buying and Green Purchase Intention

The Theory of Planned Behavior postulates that attitude is an “essential precursor of purchase intention (PI)” (Salam et al., 2022). Extending this argument to sustainable products, we argue that a positive attitude towards green buying (ATGB) significantly influences green purchase intention (GPI) (Iqbal et al., 2023). Moreover, when consumers hold a favorable attitude towards green buying (ATGB), they adopt a green purchase intention (GPI), leading to green buying behavior (Rasheed et al., 2024). We “believe that individuals with a high orientation toward sustainable practices” are not reluctant to pay high prices for sustainable products (Channa et al., 2022). We also believe such consumers adopt green products despite knowing green products are inferior to conventional products (Jabeen et al., 2023).

H5: Attitudes toward green buying (ATGB) “positively affects green purchase intention (GPI).”

Individualism, Self-Efficacy, and Green Attitude towards Green Buying

Extant literature highlights that consumers with high green self-efficacy (GSE) believe they can contribute by changing society's attitudes toward green buying (Zhang et al., 2024). Past studies have highlighted that green self-efficacy (GSE) increases the effect size between individualism (IND) and attitude toward green buying (ATGB) relationship (Ahmed & Islam, 2023). On the other hand, other studies highlight that green efficacy (GSE) decreases the effect size between individualism (IND) and attitude toward green buying (ATGB) relationship (Zhang et al., 2024; Iqbal et al., 2023).

H6: Green self-efficacy (GSE) “moderates the relationship between individualism (IND) and green purchase intention (GPI).”

Collectivism, Green Self-Efficacy, and Green Attitude towards Green Buying

Extant literature stresses that green self-efficacy (GSE) has a positive effect on the relationship between collectivism (CLT) and attitude towards green buying (ATGB) (Moazzam et al., 2023). On the other hand, other researchers believe self-efficacy (GSE) adversely affects the relationship between collectivism (CLT) and attitude towards green buying (ATGB) (Yasir et al., 2022).

H7: Green self-efficacy (GSE) “moderates the relationship between collectivism (CLT) and attitude towards green buying (ATGB).”

Methodology

Research Design

A research design has a multi-dimensional approach (Creswell, 2019). It may include survey research to measure consumers' intentions, attitudes, and behaviors (Sekaran & Bougie, 2020). Additionally, researchers could use regression analysis to analyze existing data and identify envisaged relationships (Zikmund et al., 2020). However, researchers can adopt a longitudinal study to track consumers' purchase intentions over time (Saunders et al., 2019). Alternatively, they may adopt a cross-sectional approach where researchers collect data from the respondents once. The researchers also have the option of adopting mixed methodology or quantitative research. This study has adopted a quantitative and cross-sectional approach.

Population and Sample Size

The study focused on Pakistan's textile sector, which employs 45% of the country's total labor force (Akhuand & Abbas, 2023). Besides generating significant export revenue, its contribution to GDP is about 8.5% (Mahasan et al., 2024). The diverse industry includes “cotton, synthetic fibers, filament yarn, artificial silk, wool, and jute” (Akhuand & Abbas, 2023). Based on the population of 25 million, we estimated that a “minimum sample size of 387 would be appropriate for the study.” We collected the data online by displaying the link in different social media forums related to the textile sector. We received 427 valid questionnaires.

Scale and Measures

Scales and measures are fundamental to research. They allow researchers to quantify responses for data analysis and results (Sekaran & Bougie, 2020). The study used the Five-Point Likert Scale to measure the responses. Five “showed a high agreement, and one suggested a low agreement.” Table 1 summarizes the study's scales and measures.

Table 1: Scale and Measures

Constructs	Sources	Reliability in Past studies	Nos. Items
Green Purchase Intention(GPI)	Akram et al. (2024)	0.715 to 0.860	10
Green Attitude	Channa et al., 2022)	0.735 to 0.869	10
Social Norms (SNs)	Abbas et al. (2024)	0.787 to 0.878	10
Perceived Behavior (PB)	Hassan et al. (2024)	0.701 to 0.887	10
Individualism (IND)	Majeed et al. (2022)	0.745 to 0.897	10
Collectivism (CLT)	Majeed et al. (2022)	0.799 to 0.899	10
Green Self Efficacy (GSE_	Hafeez et al. (2024)	0.705 to 0.877	06

Pilot Test

Researchers suggest conducting a pilot test in large-size studies to ensure the integrity and validity of the study (Zikmund et al., 2020). We recruited five graduate students for the pilot study. It took them 45 minutes to complete the survey form. They also reported no issue with the content and wording of the narration used in the questionnaire. The reliability values based on the pilot test were also within the acceptable range.

Statistical Analysis

Different “software, including SPSS and Smart PLS, are available for statistical analysis.” Both have advantages and disadvantages (Radomir & Ringle, 2022). We chose Smart PLS for data analysis. It is convenient and can solve complex relationships simultaneously (Sarstedt et al., 2022).

Results

Respondents Profile

It is a convention in research studies to present the respondent's profile, whether or not the study has used it for statistical analysis (Sekaran & Bougie, 2020). It allows researchers to compare it with other studies in the same domain. Table 2 shows the respondents' profiles.

Table 2: Demographic Profile

Demographic	Category	Percentage
Gender	Male	57%
	Female	44%
Marital Status	Single	43%
	Married	54%
	Divorced	10%
Age	Up to 20 Years	37%
	21 to 30 Years	33%
	31 to 40 Years	20%
	41 to 50 Years	10%
	51 Plus Years	
Education level	Martic	12%
	Inter	35%
	Diploma	
	Bachelors	45%
	Master	8%
Income	Up to Rs.50,000	7%
	Rs.51,000 to Rs.100,000	18%
	Rs.101,000 to Rs.150,000	39%
	Rs.151,000 to Rs.200,000	19%
	Rs.200,000 Plus	17%

Measurement Model

A measurement model provides insight into the “relationships between observed and latent” variables (Hair et al., 2022). It allows researchers to identify potential issues and improve the quality of the research (Sarstedt et al., 2022). Figure 2 shows the measurement model.

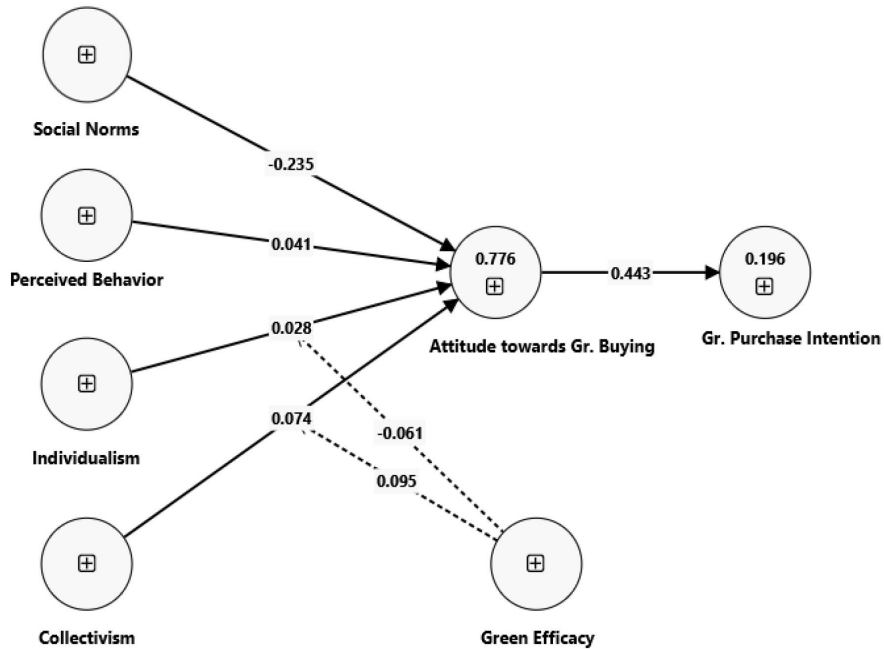


Figure 2: Measurement Model

Descriptive Analysis

Descriptive analysis lays the foundation for advanced statistical analysis, including reliability and validity (Zikmund et al., 2020). In Table 3, we have presented data related to “Mean, standard deviation, Cronbach’s Alpha, skewness, and kurtosis.”

Table 3: Descriptive Analysis

Constructs	Cronbach's alpha	Mean	Std. Dev.	Skewness	Kurtosis
Attitude Gr. Buying	0.835	3.468	1.308	1.220	-1.784
Collectivism	0.809	3.821	1.630	-2.230	1.392
Gr. Purchase Intention	0.822	4.351	2.111	1.709	1.038
Green self- Efficacy	0.779	3.450	1.228	2.107	1.567
Individualism	0.870	3.984	1.863	-1.121	2.076
Perceived Behavior	0.843	4.386	1.085	1.594	-1.735
Social Norms	0.801	4.372	1.950	1.166	1.907

Sekaran and Bougie (2020) assert “that constructs have univariate normality if the Skewness and Kurtosis values are between ± 3.5 .” Similarly, Zikmund et al. (2020) suggest that the constructs “have internal consistency if Cronbach’s Alpha values are at

least 0.700.” Our results are in line with the above researchers' prescribed suggestions. Thus, we “inferred that the constructs have acceptable univariate normality and internal consistency.”

Convergent Validity

Convergent validity is the “theoretical association between latent variables and their indicators” (Sekaran & Bougie, 2020). Many researchers suggest “using composite reliability and AVE values to ascertain convergent validity” (Sekaran & Bougie, 2020). Moreover, these researchers suggest that the constructs would meet the requirements of convergent validity if AVE values were greater than 0.500 and composite reliability values were at least 0.700. Our results in Table 4 align with the prescribed limits suggested by the above researchers, “confirming that the constructs fulfill the requirements of convergent validity.”

Table 4: Convergent Validity

Constructs	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude towards Gr. Buying	0.837	0.89	0.818
Collectivism	0.839	0.872	0.838
Gr. Purchase Intention	0.828	0.918	0.921
Green Efficacy	0.961	0.842	0.837
Individualism	0.874	0.92	0.891
Perceived Behavior	0.858	0.894	0.835
Social Norms	0.805	0.87	0.836

Model Fit Indices

Fit indices show how well the measurement model fits the data. Hair et al. (2022) suggest that SMR values must be less than 0.080, and NFI values must be greater than 0.800. The results in Table 5 align with the above researchers, suggesting adequate fitness of the study’s Model.

Table 5: Fit Indices

Fit Indices	Saturated model	Estimated model
SRMR	0.078	0.079
d_ULS	2.635	4.768
d_G	n/a	n/a
Chi-square	∞	∞
NFI	0.812	0.813

R Square Value

Hair et al. (2022) state that R² values evaluate the model's predictive power. They also stress that an R² value should be between 0 and 1. Our results in Table 6 show that the model partially predicts the outcome.

Table 6 R Square Values

Dependent Variables	R-square	R-square adjusted
Attitude towards Gr. Buying	0.776	0.774
Gr. Purchase Intention	0.196	0.196

Discriminant Validity

Creswell (2019) suggests that the researcher must ensure the constructs are “unique and empirically different.” There are many techniques for assessing discriminant validity. The study used Fornell and Larcker's (1981) criteria and HTMT ratio for discriminant validity. The results based on Fornell and Larcker's (1981) criteria in Table 7 "show that Square roots of AVE values are greater than correlation values, suggesting the constructs are unique and empirically different.”

Table 7: Discriminant Validity (Fornell & Larcker, 1981)

Constructs	AGB	CLT	GPI	GE	IND	PB	SN
Attitude towards Gr. Buying	0.818						
Collectivism	0.569	0.838					
Gr. Purchase Intention	0.443	0.554	0.921				
Green Self Efficacy	0.865	0.668	0.647	0.837			
Individualism	0.502	0.644	0.517	0.605	0.891		
Perceived Behavior	0.353	0.327	0.291	0.390	0.359	0.835	
Social Norms	0.500	0.703	0.693	0.687	0.697	0.382	0.836

Discriminant Validity (HTMT Ratio)

Researchers suggest that to ensure the quality of research, additional methods for discriminant validity should be used (Creswell, 2019; Sekaran & Bougie, 2020). Following “the above advice, we have ascertained discriminant validity using the HTMT ratio.” Rasoolimanesh (2022) suggests that in HTMT ratio analysis if HTMT ratios are less than 0.950, the constructs are unique and distinct. Table 8 shows that our results align with the guidelines of the above researcher, indicating “that the constructs used in the study are also unique and distinct.”

Table 8: Discriminant Validity (HTMT Ratio)

Constructs	AGB	CLT	GPI	GE	IND	PB	SN
Attitude towards Gr. Buying	-						
Collectivism(CLT)	0.672						
Gr. Purchase Intention (GPI)	0.532	0.688					
Green Self Efficacy (GSE)	0.899	0.799	0.842				
Individualism (IND)	0.585	0.786	0.614	0.717			
Perceived Behavior (PB)	0.412	0.401	0.34	0.445	0.414		
Social Norms (SNS)	0.607	0.896	0.857	0.889	0.836	0.457	-

Structural Model

The measurement model asses the relationships between observed and latent variables (Ringle & Sarstedt, 2022). Where as, a structural model outlines the causal relationships between latent variables in a research model (Hair et al., 2022). Figure 3 depicts the structural model.

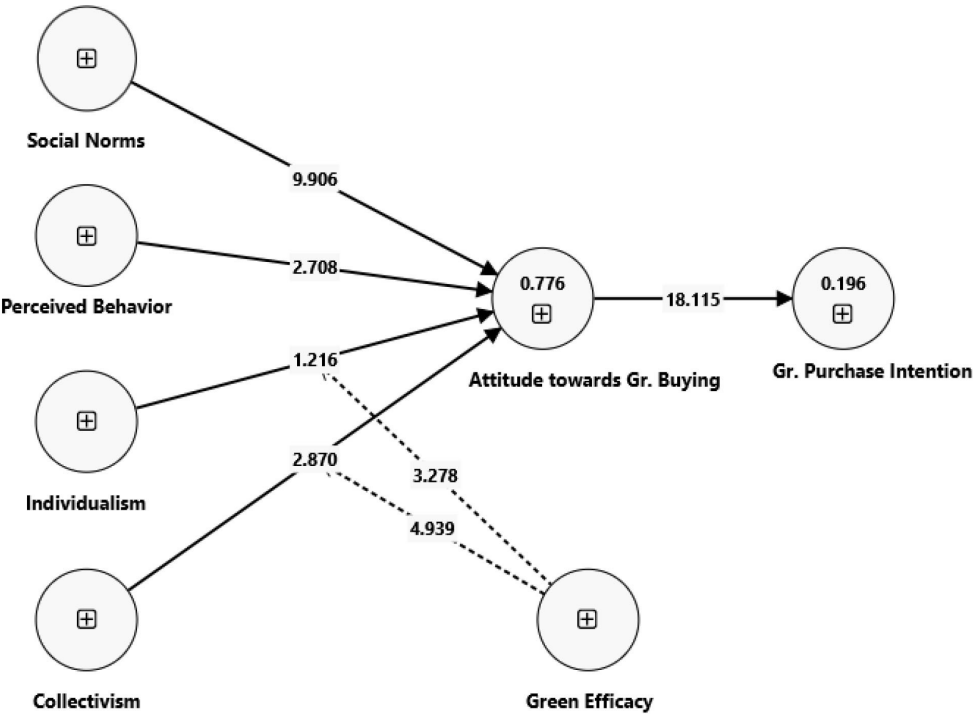


Figure 3: Structural Model

Hypothesis Results

The study has proposed “five direct and two moderating relationships. Table 9 shows the related results.”

Table 9: Hypothesis Results

Hypotheses	β	T. Stats	P values	Results
Social Norms-> Attitude Gr. Buying (H1)	- 0.235	9.906	0.00	Rejected *
Perceived Behavior -> Attitude Gr. Buying (H2)	0.041	2.708	0.000	Accepted
Individualism -> Attitude Gr. Buying (H3)	0.028	1.216	0.060	Rejected
Collectivism -> Attitude Gr. Buying (H4)	0.074	2.870	0.003	Accepted
Attitude Gr. Buying -> Gr. P. Intention (H5)	0.443	18.155	0.000	Accepted
Gr. Efficacy x Individualism. -> Att. Gr. Buying - (H6)	-0.061	3.278	0.001	Accepted
Gr. Efficacy x Collectivism -> Att. Gr. Buying (H7)	0.095	4.932	0.000	Accepted

*Significant, but the direction is contrary to the proposed hypothesis.

The study results support three direct hypotheses (H2, H4, and H5). The relationship in Hypothesis 1 is significant but we rejected this hypothesis because its direction is contrary to the proposed hypothesis. However, we found support for both moderating Hypotheses (H6 and H7).

Discussion and Conclusion

Discussion

We “found that social norms (SNs) negatively affect attitude towards green buying (ATGB).” The finding is contrary to the envisaged positive relationship. Extant literature documents that when social norms (SNs) of families and friends have a positive attitude towards green buying (ATGB), individuals adopt the same behavior (Rasheed et al., 2024). In this context, Salam et al. (2022) highlighted that social norms (SNs) aligned with sustainable practices can override individuals' preferences, leading to positive attitudes towards green buying (ATGB) (Asif et al., 2023). However, social norms (SNs) in collective societies like Pakistan shape consumers' attitudes toward green buying (ATGB) (Mansoor et al., 2022).

We “found that perceived behavior (PB) positively affects attitude towards green buying (ATGB).” Thus, when consumers control their choices, they may adopt a positive or negative attitude toward green buying (Asif et al., 2023). These negative or positive attitudes depend on their social orientation toward sustainable practices (Majeed et al., 2022). Individuals with a high orientation towards green practices would develop positive attitudes toward green buying (ATGB) (Raza & Farrukh, 2023). In contrast,

individuals with a low orientation towards green practices would develop negative attitudes toward green buying (ATGB) (Asif et al., 2023).

We “found that individualism (IND) insignificantly affects attitude towards green buying.” Like Pakistan, all countries, despite being collectivists or individualists, have segments of individualists and collectivists (Rasheed et al., 2024). Raza and Farrukh (2023) assert that the individualists in Pakistan prefer their benefits and autonomy (Shah et al., 2024). If they feel that green products are not beneficial, they will develop negative attitudes toward green buying (ATGB) (Salam et al., 2022). In contrast, individualists in Pakistan may have a positive attitude toward green buying (ATGB) if they believe they may benefit from improved health and increased social status (Asif et al., 2023).

We “found that collectivism (CLT) positively affects attitude towards green buying behavior (ATGB). Researchers have categorized Pakistan as a collectivist society (Majeed & Rasheed, 2024). Thus, most individuals in this country sacrifice their personal goals and ambitions to align with society and family values (Qureshi et al., 2023). Moreover, when individuals believe that society and families support green practices, they adopt positive attitudes toward green buying (ATGB) (Zahra et al., 2022). However, “when individuals believe their society and family” do not support sustainable practices, they adopt a negative attitude towards green buying (ATGB) (Farooqi & Frooghi, 2024).

We “found that attitudes toward green buying (ATGB) positively affects green purchase intention (GPI).” The Theory of Planned Behavior postulates that attitude is an “essential precursor of purchase intention (PI)” (Salam et al., 2022). Extending this argument to sustainable products, we argue that a positive attitude towards green buying (ATGB) significantly influences green purchase intention (GPI) (Iqbal et al., 2023). Moreover, when consumers hold a favorable attitude towards green buying (ATGB), they adopt a green purchase intention (GPI), leading to green buying behavior (Rasheed et al., 2024).

We “found that green efficacy moderates the relationships between individualism (IND) and attitude towards green buying.” Extant literature highlights that consumers with high green self-efficacy (GSE) believe they can contribute by changing society's attitudes toward green buying (Zhang et al., 2024). Past studies have highlighted that green self-efficacy (GSE) can increase effect size between individualism (IND) and attitude toward green buying (ATGB) relationship (Ahmed & Islam, 2023). On the other hand, other studies highlight that green efficacy (GSE) decreases the effect size between individualism (IND) and attitude towards green buying (ATGB) relationship (Zhang et al., 2024; Iqbal et al., 2023).

We “found that green self-efficacy (GSE) moderates the relationship between collectivism (CLT) and attitude towards green buying (ATGB).” Extant literature stresses that green self-efficacy (GSE) increases the effect size between collectivism (CLT) and attitude towards green buying (ATGB) relationship (Moazzam et al., 2023). On the other hand, other researchers believe self-efficacy (GSE) decreases the effect size between collectivism (CLT) and attitude towards green buying (ATGB) relationship (Yasir et al., 2022).

Conclusion

Sustainability awareness has grown significantly worldwide. However, Pakistan is still in its nascent stages. Many antecedents affect attitudes toward green buying (ATGB). However, by extending the “Theory of Planned Behavior,” we developed five direct and two moderating hypotheses.” We “focused on the textile sector as “it significantly contributes towards employment generation and GDP.” The “study found that perceived behavior control (PBC) and collectivism (CLT) positively affect attitudes towards green buying.” The study also documents that “social norms (SNs) negatively affect attitude towards green buying. Its direction is negative, contrary to the envisaged positive relationship. Individualism (IND) insignificantly affects attitudes towards green buying.” Moreover, it documents that attitude towards green buying positively affects green purchase intention (GPI).” Regarding moderating relationships, we found “green efficacy moderates (i) individualism (IND) and attitudes towards green buying (ATGB), and (ii) collectivism (CLT) and attitude towards green buying (ATGB).

Implications

Firms can capitalize on social norms(SNs) by emphasizing their products are environmental friendly. They may also use social proof, such as customer testimonials and reviews. These measures demonstrate to consumers that others are engaging in green buying. Moreover, eco-friendly packaging options can appeal to consumers who are concerned about environmental values.

Perceived behavior control (PBC) affects attitude towards green buying(ATGB). Therefore, we recommend that firms develop targeted marketing strategies to appeal to consumers who believe they have control over their green buying decisions. For example, firms may use social media campaigns to raise awareness about green products and provide consumers with clear and accessible information. Additionally, businesses can develop new green products and services that cater to consumers who perceive that they have control over their green buying decisions. This can include products with eco-friendly packaging, sustainable materials, and energy-efficient features.

In individualistic cultures, consumers prefer their interests over environmental concerns, which leads to low attitudes toward green buying. Thus, we recommend that businesses emphasize the personal benefits of green products, such as cost savings or improved health. By highlighting the unique features and benefits of green products, businesses can appeal to individualist consumers.

In a collectivist society, individuals sacrifice their interests if they conflict with the society's norms and values. Thus, we suggest that firms develop green marketing strategies that align with society's collectivist values.

Limitation and Future Research

This study used only two dimensions of Hofstede's Model. Other studies may incorporate all its dimensions in their framework. The study did not examine the effects of green purchase intention (GPI) on green buying behavior, which other studies could examine. The study examined the moderating effect of green self-efficacy (GSE) on attitudes toward green buying (ATGB). Other studies could use other moderators, such as ethnicity and religiosity. We focused on the textile sector. Other studies may focus on the leather and chemical sectors. We "collected the data using a cross-sectional design; other studies may use a longitudinal design."

Annexure 1

Construct and Items used in the Questionnaire

Green Buying Behavior

GBB1. I consider the environmental impact of a product before making a purchase.

GBB2. I am willing to pay a premium for eco-friendly products.

GBB3. I check a product's packaging for recyclable or biodegradable materials.

GBB4. I consider the energy efficiency of a product before making a purchase.

GBB5. I consider the energy efficiency of a product before making a purchase.

GBB6. I avoid buying products with excessive packaging.

GBB7. I consider the durability of a product to reduce waste.

GBB8. I look for products with eco-labels or certifications (e.g., Energy Star).

GBB9. I prefer to buy products made from sustainable materials.

GBB10. I feel guilty when I buy products that harm the environment.

Green Purchase Intention

GPI1. I intend to purchase eco-friendly products in the next three months

GPI2. I plan to increase my spending on green products in the future.

GPI3. I am likely to choose eco-friendly products over conventional products.

GPI4. I intend to recommend eco-friendly products to friends and family.

GPI5. I am willing to pay a premium for eco-friendly products.

GPI6. I consider environmental impact when making purchasing decisions.

GPI7. I intend to reduce my consumption of non-eco-friendly products.

GPI8. I plan to seek information about eco-friendly products before making a purchase.

GPI9. I am committed to buying eco-friendly products regularly

GPI10. I believe buying eco-friendly products is important for the environment

Green Attitude

GA1. I believe that environmental protection is a personal responsibility.

GA2. I am concerned about the impact of my purchases on the environment.

GA3. I think that buying eco-friendly products is important for the future.

GA4. I feel guilty when I buy products that harm the environment.

GA5. I believe that companies should prioritize environmental sustainability.

GA6. I am willing to sacrifice convenience for environmentally friendly options.

GA7. I think that environmental issues are a major threat to society.

GA8. I believe that individual actions can make a difference in protecting the environment.

GA9. I am more likely to choose products with minimal packaging.

GA10. I think that the government should do more to protect the environment.

Social Norms

SN1. Most people I know make an effort to buy eco-friendly products.

SN2. My friends and family think it's important to consider the environment when making purchases

SN3. I feel pressure from others to buy sustainable products.

SN4. People in my social circle would approve of me buying eco-friendly products.

SN5. I believe that most people in my community care about environmental issues.

SN6. My peers would influence my decision to buy green products.

SN7. I think that buying eco-friendly products is a social expectation.

SN8. I feel like I'm part of a group that values environmental sustainability.

SN9. Others would notice if I didn't buy eco-friendly products.

SN10. I believe that social norms influence my green-buying behavior.

Perceived Behavior Control

PBC1. . I can choose eco-friendly products when shopping.

PBC2. I am confident in my ability to make environmentally sustainable purchasing decisions.

PBC3. I have control over whether or not I buy green products.

PBC4. It is easy for me to find eco-friendly products that meet my needs.

PBC5. I have the resources (e.g., time and money) to buy green products.

PBC6. I can overcome barriers to buying eco-friendly products (e.g., higher cost)

PBC7. I have the knowledge and skills to make informed green purchasing decisions.

PBC8. I can resist social pressures to buy non-eco-friendly products.

PBC9. I have the motivation to make an effort to buy green products.

PBC10. I believe I can make a difference through my green purchasing decisions.

Individualism

IND1. I prioritize my personal needs and interests over environmental concerns.

IND2. I make purchasing decisions based on my values and beliefs.

IND3. I am more concerned with how a product benefits me than its environmental impact

IND4. I prefer to make my own decisions about what products to buy rather than following others.

IND5. I prioritize my convenience and comfort over environmental sustainability.

IND6. I am less likely to buy a product if it is perceived as "eco-friendly" but not beneficial.

IND7. I believe that individual freedom and choice are more important than environmental regulations.

IND8. I am more likely to buy a product that aligns with my values, even if it's not eco-friendly.

IND9. I prioritize my financial interests over environmental concerns.

IND10. I believe that individuals, rather than governments or organizations, should take responsibility for environmental protection

Collectivism

CLT1. I prioritize the needs of my community and society over my interests.

CLT2. I consider the environmental impact of my purchases on future generations

CLT3. I believe that environmental protection is a collective responsibility.

CLT4. I make purchasing decisions based on what is best for my community.

CLT5. I prioritize the greater good over my convenience

CLT6. I am willing to sacrifice personal benefits for the sake of the environment.

CLT7. I believe that group membership (e.g., family, community) influences my environmental Behavior.

CLT8. I consider the opinions of others in my community when making green purchasing decisions.

CLT9. I prioritize social harmony and cooperation over individual freedom.

CLT10. I believe that collective action is necessary to address environmental issues.

Green Efficacy

GEF1. I believe my actions can make a difference in protecting the environment.

GEF2. I feel confident in my ability to reduce my carbon footprint.

GEF3. I think my eco-friendly purchases can influence others to do the same.

GEF4. I believe my daily choices can contribute to a more sustainable future.

GEF5. I feel empowered to make environmentally responsible decisions.

GEF6. I think my actions can help mitigate climate change.

GEF7. I believe my support for environmental causes can create positive change.

GEF8. I feel capable of reducing my waste and living more sustainably.

GEF9. I think my choices can help preserve natural resources for future generations.

GEF10. I believe my actions can inspire others to take environmental action.

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Conflict of Interest

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Antecedents of Project Success and the Moderating Roles of Emotional Intelligence and Conflict Resolution

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Abstract

In the prevailing technological era, firms must successfully launch new and innovative projects to remain competitive. However, its success depends on various antecedents. The study extended Social Exchange Theory to develop a new model with five antecedents (leadership, team dynamics, communication, collaboration, and agile project management). It also examined the effect of two moderators (i.e., emotional intelligence and conflict resolution). We focused on Pakistan's IT sector, which has had a significantly high growth rate in the last few years. According to an estimate, the IT market in Pakistan is about \$3.5 billion, with a growth rate of about 20%. The study documents that leadership communication, collaboration, and agile project management positively affect the success of a project. However, the study concluded that team dynamics insignificantly affect project success. Moreover, it documented that emotional intelligence and conflict resolution insignificantly moderates project success.

Keywords: *Project success, team dynamics, leadership, communication, agile projects, emotional intelligence, and conflict resolution.*

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Introduction

Project success is a goal and a gateway to many positive outcomes. It enhances the organization's reputation, trust, and credibility (Abbas & Ali, 2023). Timely completion of a project signifies the achievement of its intended goals, objectives, and desired outcomes (Merrow, 2024). Moreover, it leads to a positive Return on Investment (ROI) and justifies allocated time, resources, and budget (Waqar et al., 2023). Successful projects also allow management to learn from their mistakes. It enables a team to refine its process, skills, and knowledge, increasing efficiency and productivity (Pinto et al., 2022). Furthermore, firms that complete their projects successfully give them a competitive edge over other firms in the industry (Sajid et al., 2024). We argue that project success is a testament to a firm's ability to manage complex and innovative projects (Mubarak et al., 2023).

Many studies have used different antecedents of project success in different domains (Chacko et al., 2024). A study in China examined the antecedents and consequences of project success in the construction sector (Wu et al., 2023). The study documents that successful project planning and management positively affect project success. The study also cites that mimetic and normative isomorphism mediate successful project management. Another study in Malaysia examined the factors that affect project success (Fauzi et al., 2023). The study noted that project management, decision-making, coordination, and knowledge management significantly affect project success. The study recommended that providing autonomy to individuals would enhance the chances of the project's success. Compared to the above antecedents, the present study has examined the impact of leadership, team dynamics, communication, collaboration, and agile project management on project success.

Numerous studies have explored the impact of various moderators on project success in different sectors and countries (Fauzi et al., 2023). For instance, a study in the Portuguese IT sector found that project complexity positively moderates absorptive capacity and strategic agility. It also documented that project complexity insignificantly moderates the relationship between realized absorptive capacity and strategic agility (Mata et al., 2023). This underscores the need for further research on the role of project complexity in the IT sector (Mata et al., 2023). Another study on project success focused on managing public sector units in Pakistan (Fareed et al., 2023). The study documented that top management positively moderates transformational leadership and project success. It suggested that top management must share their goals and objectives with the project team. In addition, it recommended that public sector projects adopt a transformational leadership style (Fareed et al., 2023). Moreover, another study in Pakistan examined the moderating role of organizational support in determining project success. The study documents that organizational support positively moderates

(i) project cost and project success, (ii) project quality and project success, and (iii) project time and project success (Watanabe et al., 2024). Compared to the moderators used in past studies, this study has examined the moderating effect of emotional intelligence and conflict resolution on project success.

Given the above-discussed gaps, this study has examined:

1. The impact of leadership, team dynamics, communication, collaboration, and agile project management on project success.
2. The moderating effect of emotional intelligence and conflict resolution on project success.

Literature Review

Theoretical Underpinning

Social Exchange Theory (SET) is a psychological concept that explains how people form and maintain relationships based on exchanging resources, such as emotional support, companionship, or material goods (Tripp, 2023). In the context of project success, the theory posits that project success is contingent upon the reciprocal relationships and exchanges between team members, leadership, and stakeholders (Watanabe et al., 2024). In this context, effective leadership fosters a positive exchange climate, promoting team dynamics, communication, collaboration, and ultimately, project success (Waqar et al., 2023). When leaders facilitate open communication, empower team members, and encourage collaboration, team members reciprocate with increased motivation, commitment, and productivity (Chacko et al., 2024). Furthermore, adopting agile project management practices enhances this exchange by promoting flexibility, adaptability, and continuous improvement (Abbas & Ali, 2023). As team members experience a sense of value and satisfaction from these exchanges, they are more likely to invest their time, energy, and expertise in the project, ultimately contributing to its success. (Pinto et al., 2022).

SET has far-reaching applications in various fields, including organizational behavior, interpersonal relationships, marketing, and sociology (Kalra et al., 2024). It helps social media users understand social interaction dynamics, enabling them to improve relationships, teamwork, and overall well-being (Cortez & Johnston, 2020; Luqman et al., 2023).

Project Success

Researchers believe project success is the key indicator of an organization's efficiency and management capability (Watanabe et al., 2024). Project success has various outcomes (Pinto et al., 2022). Researchers measure it by the degree to which a project achieves its intended objectives and meets the needs of its stakeholders (Waqar et al., 2023). Chacko et al. (2024) assert that several key factors contribute to project success. Clear and effective communication among team members, stakeholders, and sponsors is critical (Chacko et al., 2024). This ensures that everyone is aligned with the project's goals, objectives, and timelines (Abbas & Ali, 2023). A well-defined scope is another essential factor for a project (Pinto et al., 2022). This ensures that the project stays focused and enables the team to deliver the expected outcomes (Waqar et al., 2023). Moreover, a successful project significantly depends on strong management (Chacko et al., 2024). It includes developing a comprehensive plan, realistic timelines, and milestones and identifying the potential risks (Abbas & Ali, 2023). Furthermore, project success depends on adapting to change and uncertainty (Pinto et al., 2022). This involves being flexible, responsive, and resilient in the face of unexpected challenges or shifts in project requirements (Waqar et al., 2023). Additionally, project success is about delivering value to the organization and its stakeholders. It requires a deep understanding of the project's goals, a clear vision, and the ability to execute the plan effectively (Chacko et al., 2024).

Leadership

Good leadership involves motivating individuals or teams to achieve a common goal or vision (Ekemezie & Digitemie, 2024). Ghorbani (2023) asserts that effective leaders possess skills and qualities that guide and direct others toward a shared objective. Moreover, they set a clear direction, communicate effectively, and empower others to take action (Abbas & Ali, 2023). Researchers believe that leaders possess strong communication and interpersonal skills, which enable them to build trust and rapport with their team members (Ukato et al., 2024). Besides other traits, emotional intelligence and empathy are essential traits of leaders. These traits help leaders to understand and respond to their team's needs and concerns (Fareed et al., 2022). Moreover, researchers believe effective leaders are strategic thinkers who make informed decisions that align with the organization's mission and vision (Ghorbani, 2023). Furthermore, such leaders are flexible and adaptable. They navigate complex and rapidly changing environments (Ekemezie & Digitemie, 2024). Additionally, integrity, accountability, and a strong sense of ethics are essential for effective leaders. These are essential ingredients to promote and foster a culture of trust and respect within the organization (Abbas & Ali, 2023). Ukato et al. (2024) assert that effective leadership is about creating a positive and productive work environment, fostering collaboration and innovation, and guiding individuals and

teams toward achieving their full potential. Thus, we argue that leaders can inspire and motivate others to succeed by possessing the right skills, traits, and qualities (Fareed et al., 2022).

Team Dynamics

Harris et al. (2024) assert that team dynamics refer to organizational interactions, relationships, and behaviors. It includes how team members communicate, collaborate, and work together to achieve common goals (Shaukat et al., 2022). Researchers believe effective team dynamics are crucial for a team's success as they foster a positive and productive work environment (Benjamin et al., 2024). Moreover, positive team dynamics increase the sense of belonging of the team members (Licorish et al., 2024). As a result, their motivation increases profoundly (Zaman et al., 2023). Contrarily, negative team dynamics lead to conflict, mistrust, and a lack of productivity (Blak-Bernat et al., 2023). Radhakrishnan et al. (2022) assert that besides other factors, important ingredients of team dynamics are communication styles, leadership, trust, and diversity. Moreover, effective team communication helps team members better understand each other's perspectives and work together toward a common goal (Abbas & Ali, 2023). Furthermore, effective leadership is essential for team dynamics (Harris et al. 2024). It establishes a clear vision, provides guidance, and fosters a positive team culture (Shaukat et al., 2022). Benjamin et al. (2024) assert that trust and diversity are other critical elements of positive team dynamics. When team members trust each other, they are more likely to share ideas, take risks, and work collaboratively (Zaman et al., 2023). Similarly, diversity within a team brings different perspectives and ideas, leading to more innovative and effective solutions (Blak-Bernat et al., 2023).

Communication

Communication is the foundation of any successful relationship, whether personal or professional. It involves exchanging information, ideas, and messages between individuals or groups (Daramola et al., 2024). Moreover, effective communication is critical in conveying thoughts, opinions, and intentions clearly and concisely (Muneer et al., 2022). Good communication skills involve several key elements, including verbal and nonverbal communication, active listening, and clarity of message (Blak-Bernat, 2023). Verbal communication refers to sharing ideas and information through spoken words to convey meaning, while nonverbal communication involves using body language, facial expressions, and tone of voice (Kala-Kamdjou, 2024). Active listening refers to concentrating on what others say, understanding their perspective, and responding thoughtfully (Radhakrishnan et al., 2024).

Clear and effective communication can help build trust, prevent misunderstandings,

and resolve conflicts (Muneer et al., 2022). Good communication skills can help foster a positive and productive work environment, improve collaboration and teamwork, and enhance customer relationships in a professional setting (Kala-Kamdjou, 2024). In contrast, poor communication can lead to confusion, misinterpretation, and conflict. It can also result in missed opportunities, errors, and decreased productivity (Muneer et al., 2022). Therefore, developing and practicing effective communication skills in all aspects of life is essential (Daramola et al., 2024).

Collaboration

Vaez-Alaei et al. (2024) argue that collaboration is working together to achieve common goals and objectives. As a result, it improves a firm's existing process (Swart et al., 2022). Extant literature suggests that collaboration within a team benefits an organization (Naseer et al., 2022). It improves creativity, knowledge sharing, and problem-solving (Kudyba & Cruz, 2023). Besides other factors, effective collaboration depends on clear communication, trust, and respect between team members (Blak-Bernat et al., 2023). Working as a team, individuals can leverage each other's strengths to achieve greater success and make a more significant impact (Rehan et al., 2024). In contrast, a non-collaboration attitude within a team reduces the chances of a project's success (Radhakrishnan et al., 2024).

Agile Project Management

Palopak and Huang (2024) assert that agile project management is an iterative and incremental approach emphasizing flexibility, collaboration, and rapid delivery. Agile management uses different methods to achieve its goals (Ciric Lalic et al., 2022). It includes extreme programming (XP) and Scrum (Ansari et al., 2024). XP emphasizes technical practices like pair programming, continuous integration, and refactoring (Bilir, 2022). Scrum is a framework for managing and completing complex projects using iterative and incremental practices (Radhakrishnan et al., 2022.) Extant literature suggests agile practices include sprint planning, daily stand-ups, and continuous integration and delivery (Moedt-van-Bolhuis et al., 2023). Sprint planning involves planning and prioritizing work for a specific iteration or sprint (Bilir, 2022). Daily stand-ups are perpetual meetings to discuss progress, plans, and obstacles (Ciric Lalic et al., 2022). Continuous integration and delivery ensure that working software is integrated and delivered regularly, allowing for rapid feedback and adaptation (Bilir, 2022).

Radhakrishnan et al. (2022) assert that agile project management has many benefits and challenges. The benefits include faster time-to-market, improved collaboration, increased flexibility, and enhanced quality (Ansari et al., 2024). Moreover, agile management allows teams to deliver working software quickly and respond to change

(Ciric Lalic et al., 2022). As a result, it promotes teamwork, communication, and customer involvement (Palopak & Huang 2024).

Emotional Intelligence

Emotional intelligence is important for individuals as it enhances relationships and communication and improves decision-making and problem-solving (Watanabe et al., 2024). Highly emotionally intelligent persons can understand their and others' emotions (Ahmad et al., 2022). This allows them to control emotions and solve problematic issues (Shahzad et al., 2023). Moreover, emotional intelligence increases self-awareness and personal growth. As a result, it allows individuals to have an adequate work-life balance, leading to mental health and well-being (Rahul, 2024). Furthermore, researchers believe it promotes effective leadership and teamwork and enhances adaptability and resilience (Saeed et al., 2023). Not all individuals have the same level of emotional intelligence. Researchers believe individuals can improve it by practicing self-reflection, introspection, empathy, and active listening (Sposito et al., 2024). Moreover, we argue that individuals can improve their personal and professional relationships by increasing emotional intelligence. As a result, they can achieve greater success and enhance their overall well-being, leading to a more fulfilling and purposeful life (Shahzad et al., 2023).

Conflict Resolution

Moedt-van-Bolhuis et al. (2023) assert that conflict resolution is resolving individual, group, or organization disputes or disagreements. It involves identifying the root causes of the conflict, addressing the needs and concerns of all parties involved, and finding a mutually acceptable solution (Bilir, 2022). Moreover, effective conflict resolution requires communication, active listening, empathy, and problem-solving skills (Radhakrishnan et al., 2022). Ansari et al. (2024) suggest that individuals must remain calm and composed when conflict arises. This prevents escalation and creates a more constructive environment for resolving the issue (Ciric-Lalic et al., 2022). Another important aspect of conflict resolution is avoiding blame and defensiveness. Instead of focusing on who is right or wrong, seeking common ground and areas of agreement is more productive (Ciric-Lalic et al., 2022). Being willing to compromise and find mutually acceptable solutions is also key. This might involve finding creative solutions that meet the needs of all parties involved (Palopak & Huang, 2024).

Hypothesis Development

Leadership and Project Success

Researchers believe effective leadership is an important precursor to project success (Abbas & Ali, 2023). Moreover, researchers highlighted that a leader with a clear vision

and strong communication skills motivates the team members to achieve the project objectives (Ahmad et al., 2022). Furthermore, Ukato et al. (2024) assert that good leaders develop a conducive organizational culture that promotes teamwork and builds employee trust and confidence. As a result, they fully participate in achieving organizational goals (Khan et al., 2024). Additionally, effective leaders prioritize risk management and quality assurance and ensure employee project deliverables are as per their expectations (Ghorbani, 2023). Extending the above arguments, Fareed and Su (2022) argue that effective leaders contribute to project success by enhancing team productivity and improving communication and collaboration (Ekemezie & Digitemie, 2024). As a result, these measures increase the satisfaction of all the stakeholders (Almashhadani & Almashhadani., 2023). Thus, we argue that effective leadership is the foundation for successful projects (Fareed et al., 2022).

H1: Leadership “positively affects project success.”

Team Dynamics and Project Success

Besides other antecedents, team dynamics is an important precursor of project success (Blak-Bernat et al., 2023). Ekemezie et al. (2024) assert that a team with positive dynamism can overcome obstacles, innovate, and deliver high-quality results (Radhakrishnan et al., 2022). Moreover, for project success, the team members must possess effective communication and conflict-resolution skills, as they foster a conducive environment of trust and open communication. As a result, such a conducive environment improves team dynamism and chances of project success (Blak-Bernat et al., 2023). Moreover, researchers assert that adaptability and flexibility enable teams to adjust their projects to changing requirements (Benjamin et al., 2024). Furthermore, clear roles, responsibilities, and accountability promote ownership and commitment in a team, while effective leadership provides guidance, support, and empowerment (Zaman et al., 2023). All these factors of team dynamism, individually and collectively, positively affect project success (Licorish et al., 2024). Extending the above arguments, we believe positive team dynamics promote productivity, creativity, job satisfaction, and engagement (Shaukat et al., 2022). We also believe poor team dynamics can lead to communication breakdowns, lack of trust, and decreased motivation, ultimately jeopardizing project success. Moreover, by fostering positive team dynamics, project managers can create an environment that supports collaboration, innovation, and success (Harris et al., 2024).

H2: Team “dynamics positively affect project success.”

Communication and Project Success

Effective communication is the backbone of project success, profoundly affecting various aspects of project management (Hans, 2024). Researchers believe it promotes trust, understanding, and cooperation among team members (Almashhadani & Almashhadani, 2023). As a result, all team members work towards common goals (Daramola et al., 2024). Elaborating on the above, we argue that effective communication promotes a relationship of trust and respect between leaders and team members (Ezeigweneme et al., 2023). Moreover, researchers believe timely and clear communication reduces the adverse effects of delay (Zhang et al., 2022).

Furthermore, it identifies risks and reduces project uncertainty (Ahmed et al., 2024). Thus, clear communication helps firms adapt to changes and keep the project on track. Siddiqui et al. (2023) highlight that effective communication ensures that the team members understand all the required quality standards and strive to achieve them (Radhakrishnan et al., 2024). This results in high-quality deliverables (Siddiqui et al., 2023). Researchers also argue that accurate communication in a firm has several advantages, including managing timelines and budgets and preventing costly delays and overruns (Kala-Kamdjou, 2024). Moreover, open communication boosts team morale, motivation, job satisfaction, and productivity (Blak-Bernat, 2023). In contrast, poor communication can lead to misunderstandings, delays, team conflicts, and project failure (Muneer et al., 2022). Based on the above discussions, project managers can significantly enhance project outcomes by prioritizing effective communication. (Daramola et al., 2024).

H3: Communication “positively affects project success.”

Collaboration and Project Success

Collaboration among team members improves communication, increases productivity, and positively affects project success (Bradley et al., 2023). Radhakrishnan et al. (2022) assert that when team members and stakeholders work together, they share knowledge, expertise, and diverse perspectives, leading to innovative solutions and better decision-making (Pinto et al., 2022). Extending the above, we argue that collaboration has several advantages (Rehan et al., 2024). For example, it streamlines processes, reduces duplication of effort, and enhances efficiency. As a result, it enables teams to achieve project objectives (Blak-Bernat et al., 2023). Moreover, strong interpersonal relations, trust, and productive engagement between team members are needed to achieve better outcomes (Swart et al., 2022). Additionally, Vaez-Alaei et al. (2024) assert that team collaboration helps achieve higher standards for project-related tasks. Thus, we argue that by promoting collaboration, project managers can create

an environment that supports teamwork, leading to outstanding project outcomes (Naseer et al., 2022).

H4: Collaboration “positively affects project success.”

Agile Project Management and Project Success

Agile project management enhances flexibility, fosters collaboration, and promotes project success (Sulá et al., 2024). This approach empowers managers to equip their teams with the necessary software at the right time to increase efficiency and effectiveness (Kudyba & Cruz, 2023). Moreover, it cultivates a culture of teamwork, open communication, and stakeholder involvement (Palopak & Huang, 2024). Thereby increasing customer and stakeholder satisfaction (Ciric Lalic et al., 2022). The iterative approach allows the team to identify and address the issues and problems early. As a result, it improves quality outcomes and reduces the risk of project failure (Ansari et al., 2024). We argue that agile project management allows firms to monitor project progress and make informed decision-making (Radhakrishnan et al., 2022). We also assert that firms adopting agile project management face challenges, including increased initial overhead and scaling complexities (Bilir, 2022). However, despite these challenges, its overall benefits are valuable for organizations seeking to improve their project management capabilities (Moedt-van-Bolhuis et al., 2023).

H5: Agile “project management positively affects project success.”

Leadership, Emotional Intelligence, and Project Success

Past studies document that emotional intelligence plays a significant role in the complex relationship between leadership, emotional intelligence, and project success (Watanabe et al., 2024). When leaders possess high emotional intelligence, their leadership style becomes more effective, improving project outcomes. Emotional intelligence enables leaders to understand their team members' emotions, needs, and concerns. This is essential to promote a conducive environment in an organization and increase the chances of project success (Shahzad et al., 2023). Extending this argument, Sposito et al. (2024) assert that high emotional intelligence is a precursor of relationships between leaders and team members and project success (Ishfaq & Abbasi, 2022). On the contrary, leaders with low emotional intelligence need to understand team members' emotional needs and concerns. If they do not, it may adversely affect project success (Kukah et al., 2023).

H6: Emotional intelligence “moderates the relationship between leadership and project success.”

Agile Project Management, Conflict Resolution, and Project Success

Conflict resolution is a critical component of agile project management, and its impact on project success cannot be overstated (Ansari et al., 2024). Past studies document that conflict resolution directly and indirectly affects the project's success (Saxena et al., 2023). When conflicts are resolved in an organization, the agile team can focus on delivering high value and meeting customers' needs (Amani et al., 2022). As a result, it enhances the relationship between agile projects and project success (Haider et al., 2024). Conversely, unresolved conflict can lead to delays, decreased morale, and compromised project success (Kudyba & Dcruz 2023). As a result, it negatively affects the association between agile project management and project success (Bilir, 2022).

H7: Conflict resolution “moderates the relationship between agile project and project success.”

Conceptual Framework

A conceptual framework is a theoretical structure that allows researchers to understand the key relationship between the variables used in a study (Solarino & Buckley, 2023). This study has extended the social exchange theory to develop the conceptual framework. Figure 1 shows five direct and two moderating relationships.

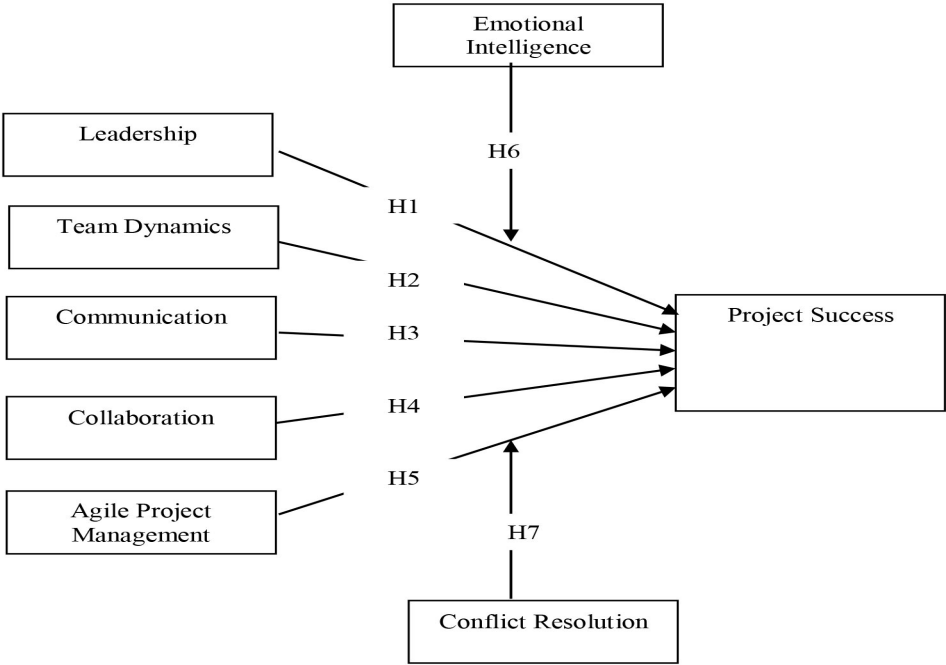


Figure 1: Conceptual Framework

Methodology

Research Design

A research design helps researchers outline the procedures to achieve the research objectives (Ratten, 2023). It includes types of research, methods to collect the data, and data analysis techniques (Zikmund et al., 2020). This study has adopted a quantitative and deductive approach. A quantitative approach systematically collects and statistically analyzes the numerical data to identify the trends, correlations, and relationships (Wilkinson, 2017). Deductive research begins with theory or theory building, then collecting numerical data and testing the proposed hypotheses (Saunders et al., 2019). Bell and Alexander (2022) assert that the deductive approach allows researchers to draw reliable conclusions and make informed decisions based on empirical evidence.

Population and Sampling

The study has focused on Pakistan's IT sector, which contributes significantly to GDP and employment (Aslam & Ali, 2022). According to an estimate, the IT market in Pakistan is about \$3.5 billion, with a growth rate of about 20%. Researchers believe it will increase significantly in the next few years (Zia & Ali, 2022). Moreover, researchers estimate that Pakistan has a large workforce of about 200,000 IT professionals (Institute of Policies Studies, 2024). Given this population, we used the Rao soft web page to calculate the minimum sample size and found that a sample of 387 would be appropriate. The study collected the data by displaying the link in online IT forums. About 435 IT professionals responded. After dropping the incomplete questionnaires, our valid sample size was 405.

Statistical Analysis

Smart PLS is a popular statistical analysis software. Many researchers use it in their studies because of its ease of use, advanced algorithms, and compressive output (Bell & Alexander, 2022). Moreover, it allows researchers to solve complex relationships (Saunders et al., 2019). Furthermore, it gives a detailed output, including path coefficients, loadings, and quality criteria.

Scale and Measures

The study collected the data using a five-point Likert Scale questionnaire. Five suggests a high agreement, and one suggests a low agreement. A close-ended questionnaire has several limitations. However, we have used it because it is more efficient to collect data from a large population (Bell & Alexander, 2022). Table 1 depicts the constructs and number of items used in the questionnaire. It also shows the sources from where we adapted the constructs.

Table 1: Scale and Measures

Constructs	Sources	Items	Reliability
Agile Project	Shameem et al. (2024)	10	0.710 to 0. 875
Collaboration	Haaskjold and Andersen, 2020)	12	0/783 to 0.893
Communication	Daramola et al. 2024	10	0795 to 0.856
Conflict Resolution	Saxena et al. (2023)	10	0.805 to 0.884
Emotional Intelligence	Saeed et al. (2023)	15	0.781 to 0.786
Leadership	Rehan et al.(2024)	10	0.779 to 0.895
Project Success	Iriarte and Bayona (2020)	10	0787 to 0. 873
Team Dynamics	Harris et al. (2024)	10	0.801 to 0.895

Results

Respondents Profile

Demographic profiles help understand the respondents' trends and patterns and help firms develop appropriate marketing strategies. Table 2 shows the profile of the target population.

Table:2 Demographic Profile

Demographic	Category	Percentage
Gender	Male	53%
	Female	47%
Age	20-30 years	37%
	30-40-years	33%
	40-50 years	20%
	Above 50 years	10%
Education level	Martic	12%
	Inter	35%
	Bachelors	45%
	Master	8%
Marital Status	Single	57%
	Married	43%
Income	Up to Rs.50,000	7%
	Rs.51,000 to Rs.100,000	18%
	Rs.101,000 to Rs.150,000	39%
	Rs.151,000 to Rs.200,000	19%
	Rs.200,000 Plus	17%

Descriptive Statistics

Descriptive analysis simplifies complex data and lays the groundwork for predictive modeling. Table 3 shows the constructs’ internal consistency, mean standard deviation, Skewness, and Kurtosis values.

Table 3: Descriptive Analysis

Constructs	Cronbach's alpha	Mean	Std. Dev	Skewness	Kurtosis
Agile Project	0.815	3.663	2.620	2.360	-2.026
Collaboration	0.822	4.129	1.986	1.870	1.975
Communication	0.805	3.914	2.080	2.018	1.845
Conflict Resolution	0.744	3.708	2.572	-2.425	2.378
Emotional Intelligence	0.871	3.525	2.108	2.366	-1.540
Leadership	0.843	3.574	1.997	2.141	1.833
Project Success	0.785	3.849	1.626	1.770	1.693
Team Dynamics	0.870	3.915	2.198	2.534	1.621

Our results show that conflict resolution ($\alpha=0.744$) “has the lowest internal consistency, and emotional intelligence ($\alpha=0.871$) has the highest. The results “suggest the constructs have adequate internal consistency.” Moreover, the constructs’ “Skewness and Kurtosis values are in the range of ± 3.5 , suggesting they fulfill the requirement of univariate normality” (Saunders et al., 2019).

Convergent Validity

Convergent validity is a “theoretical association between a construct and its indicators.” The study has used composite reliability and AVE values to assess convergent validity. Table 4 shows that the AVE values are greater than 0.676, and the composite reliability validity values are greater than 0.747. These results suggest that the constructs meet the requirement of convergent validity.

Table 4: Convergent Validity

Constructs	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Agile Project	0.843	0.889	0.729
Collaboration	0.823	0.918	0.849
Communication	0.829	0.885	0.721
Conflict Resolution	0.747	0.842	0.728
Emotional Intelligence	0.888	0.911	0.719
Leadership	0.874	0.893	0.676
Project Success	0.785	0.903	0.823
Team Dynamics	0.877	0.920	0.794

Discriminant Validity

Discriminant validity allows researchers to ensure that a construct or variable “is truly distinct from other related variables.” It also allows the researchers to determine whether the used measures are distinct and are not overlapping or reductant.” (Zhang& Chen, 2022). Several techniques are available for assessing discriminant validity, including correlation analysis, factor analysis, structural equation modeling, and multi-trait multi-method matrix. The study used Fornell and Larcker's (1981) criteria for discriminant validity. The results presented in Table 5 show the constructs are unique and distinct. Because “Correlation values are less than the square root of AVG values” (Fornell & Larcker, 1981).

Table 5: Discriminant Validity

Constructs	AP	CL	CM	CR	EI	LD	PS	TD
Agile Project	0.854							
Collaboration	0.418	0.921						
Communication	0.547	0.628	0.849					
Conflict Resolution	0.756	0.679	0.892	0.853				
Emotional Intelligence	0.388	0.700	0.662	0.711	0.848			
Leadership	0.299	0.293	0.359	0.429	0.293	0.822		
Project Success	0.409	0.689	0.656	0.690	0.751	0.310	0.907	
Team Dynamics	0.489	0.520	0.578	0.618	0.567	0.353	0.546	0.891

Structural Model

A structural model depicts “the relationships between latent variables and their strength and direction.” Figure 2 represents the structural model.

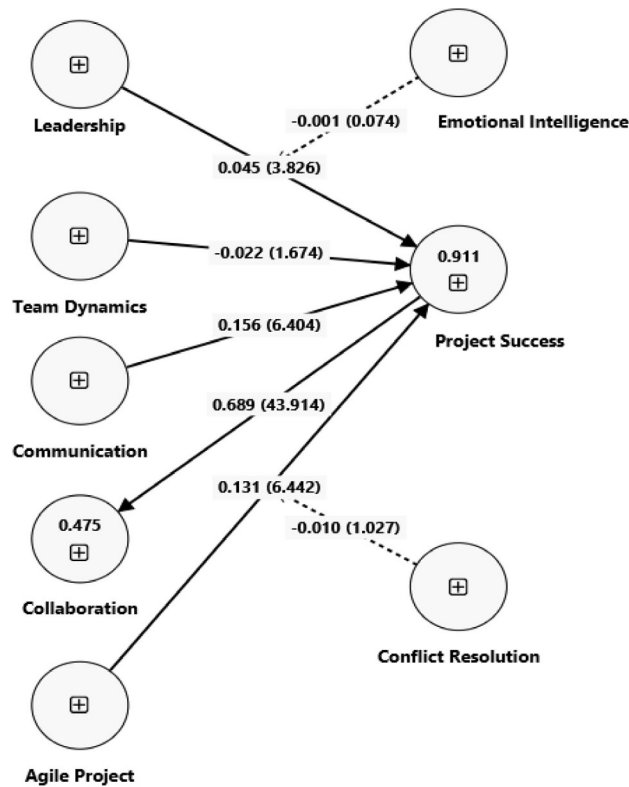


Figure 2 Structural Model

Hypothesis Results

We have extended Social Exchange Theory and “developed a new model containing five direct and two moderating relationships.” Table 6 depicts the results.

Table 6: Results

Relationships	β	T stat.	P values	Results
Leadership -> Project Success (H1)	0.045	3.826	0.000	Accepted
Team Dynamics -> Project Success (H2)	-0.022	1.674	0.074	Rejected
Communication -> Project Success (H3)	0.156	6.404	0.000	Accepted
Collaboration -> Project Success (H4)	0.689	43.914	0.000	Accepted
Agile Project -> Project Success (H5)	0.131	6.442	0.000	Accepted
Emotional Intelligence x Leadership -> Project Success (H6)	-0.001	0.074	0.470	Rejected
Conflict Resolution x Agile Project -> Project Success (H7)	-0.010	1.027	0.152	Rejected

We found support for four direct hypotheses (H1, H3, H4, and H5) but not for Hypothesis 2. Moreover, we did not find support for two moderating hypotheses (H6 and H7).

Discussion and Conclusion

Discussion

The study supported Hypothesis 1: "Leadership positively affects project success." Researchers believe effective leadership is an important precursor to project success (Abbas & Ali, 2023). Moreover, researchers highlighted that a leader with a clear vision and strong communication skills motivates the team members to achieve the project objectives (Ahmad et al., 2022). Furthermore, Ukato et al. (2024) assert that good leaders develop a conducive organizational culture that promotes teamwork and builds employees' trust and confidence. As a result, they fully participate in achieving organizational goals (Khan et al., 2024). Additionally, effective leaders prioritize risk management and quality assurance and ensure employee project deliverables are as per their expectations (Ghorbani, 2023).

We did not find support for Hypothesis 2: "Team dynamics positively affects project success." Ekemezie et al. (2024) assert that a team with positive dynamism can overcome obstacles, innovate, and deliver high-quality results (Radhakrishnan et al., 2022). Moreover, for project success, the team members must possess effective communication and conflict-resolution skills, as they foster a conducive environment of trust and open communication. As a result, such a conducive environment improves team dynamism and chances of project success (Blak-Bernat et al., 2023). Moreover, researchers assert that adaptability and flexibility enable teams to adjust their projects to changing requirements (Benjamin et al., 2024). Furthermore, clear roles, responsibilities, and accountability promote ownership and commitment in a team, while effective leadership provides guidance, support, and empowerment (Zaman et al., 2023). All these factors of team dynamism, individually and collectively, positively affect project success (Licorish et al., 2024).

The study supported Hypothesis 3: "Communication positively affects project success." Effective communication is the backbone of project success, profoundly affecting various aspects of project management (Hans, 2024). Researchers believe it promotes trust, understanding, and cooperation among team members (Almashhadani & Almashhadani, 2023). As a result, all team members work towards common goals (Daramola et al., 2024). Elaborating on the above, we argue that effective communication promotes a relationship of trust and respect between leaders and team

members (Ezeigweneme et al., 2023). Moreover, researchers believe timely and clear communication reduces the adverse effects of delay (Zhang et al., 2022).

We found that “collaboration positively affects project success (H4).” Collaboration among team members improves communication, promotes creativity, increases productivity, and positively affects project success (Bradley et al., 2023). Radhakrishnan et al. (2022) assert that when team members and stakeholders work together, they share knowledge, expertise, and diverse perspectives, leading to innovative solutions and better decision-making (Pinto et al., 2022). Extending the above, we argue that collaboration has several advantages (Rehan et al., 2024). For example, it streamlines processes, reduces duplication of effort, and enhances efficiency, enabling teams to achieve project objectives (Blak-Bernat et al., 2023). Moreover, strong interpersonal relations, trust, and productive engagement between team members are needed to achieve better outcomes (Swart et al., 2022).

The study supported Hypothesis 5: “Agile projects management positively affect project success.” Agile project management enhances flexibility, fosters collaboration, and promotes project success (Sulá et al., 2024). This approach empowers managers to equip their teams with the necessary software at the right time to increase efficiency and effectiveness (Kudyba & Cruz, 2023). Moreover, it cultivates a culture of teamwork, open communication, and stakeholder involvement (Palopak & Huang, 2024). Thereby increasing customer and stakeholder satisfaction (Ciric-Lalic et al., 2022). The iterative approach allows the team to identify and address the issues and problems early. As a result, it improves quality outcomes and reduces the risk of project failure (Ansari et al., 2024).

The study “rejected Hypothesis 6: Emotional Intelligence moderates the relationship between leadership and project success.” Past studies document that emotional intelligence plays a significant role in the complex relationship between leadership and project success (Watanabe et al., 2024). When leaders possess high emotional intelligence, their leadership style becomes more effective, improving project outcomes. Emotional intelligence enables leaders to understand better their team members' emotions, needs, and concerns, fostering a positive team culture, encouraging collaboration, and facilitating open communication (Shahzad et al., 2023). Extending this argument, Sposito et al. (2024) assert that high emotional intelligence amplifies the positive effect on the relationship between leadership and project success (Ishfaq & Abbasi, 2022). On the contrary, leaders with low emotional intelligence do not understand team members' emotional needs and concerns. As a result, low emotional intelligence negatively affects the relationship between leadership and project success

(Kukah et al., 2023).

The study “rejected Hypothesis 7: Conflict resolution moderates the relationship between agile project management and project success.” Conflict resolution is a critical component of agile project management, and its impact on project success cannot be overstated (Ansari et al., 2024). Past studies document that conflict resolution directly and indirectly affects the project's success (Saxena et al., 2023). When conflicts are resolved in an organization, the agile team can focus on delivering high value and meeting customers' needs (Amani et al., 2022). As a result, it enhances the relationship between agile project management and project success (Haider et al., 2024). Conversely, unresolved conflict can lead to delays, decreased morale, and compromised project success (Kudyba & Dcruz, 2023). As a result, it negatively affects the association between agile project management and project success (Bilir, 2022).

Conclusion

Project success is important for a firm's reputation. It increases employees' motivation, satisfaction, and productivity. Given its importance, the study extended the Social Theory and developed a new model with five direct and two moderating relationships.” We focused on Pakistan's IT sector, which has had a significantly high growth rate in the last few years. A talented workforce and government support have contributed to the growth of the IT sector (Aslam & Ali, 2022). According to an estimate, the IT market in Pakistan is about \$3.5 billion, with a growth rate of about 20%, and it appears to increase significantly in the next few years (Zia & Ali, 2022). The study documents that leadership, communication, collaboration, and agile project management positively affect the success of a project. However, the study found that team dynamics insignificantly affect project success. Moreover, it documented that emotional intelligence insignificantly moderates the relationship between leadership and project success. The study also found that conflict resolution insignificantly moderates the relationship between agile project management and project success.

Implications

Effective leadership is essential for project success, which our study also validates. Effective leaders cultivate a conducive environment in an organization. They also motivate and share vision and objectives with team members. As a result, a team's motivation and productivity increase, contributing to a project's success.

Our study found that team dynamics insignificantly affect project success. Despite this, team dynamics are crucial for project success. We suggest that Pakistani firms cultivate positive team dynamics, which benefits a project. Leaders must also establish

clear goals and share them with the team members to cultivate positive team dynamics. Moreover, we recommend that firms encourage the team members to share and discuss project-related issues with each other. As a result, the team members' engagement will increase significantly, leading to project satisfaction.

Extant literature highlights that effective communication is essential for a project's success, which our study also validates. Thus, firms must promote an effective communication environment. For this, the leaders must develop clear protocols and encourage employees to share their ideas without fear. This enhances team engagement and satisfaction.

Collaboration is vital for project success, which our study also validates. To improve collaboration within an organization, leaders must establish clear goals and objectives, which they share with all employees. The firms must also encourage the employees to share their views and perspectives on the project. Additionally, the leaders must listen to the employees' problems and issues with empathy. Diverse views improve an organization's objectives and goals. However, conflicts between two or more members adversely affect the project's success. Therefore, managers should improve their conflict-resolution skills and use these skills to resolve the conflict immediately.

Agile project management is an essential precursor for project success, which our study has also validated. To improve agile project management, firms must focus on iterative development. Management must continuously improve processes and develop a cross-functional team. Scrum, Kanban, and Dynamic Systems Development are other strategies they can adopt.

Limitations and Future Research

We have focused on the IT sector of Pakistan because it has a significant growth rate and huge export potential. Other studies may explore other sectors, such as textile and chemical, as they contribute significantly toward GDP and employment generation. We have used only five antecedents in the study. Future studies may add more antecedents to their framework, such as project management maturity, decision-making, coordination, and knowledge management. The study used emotional intelligence and conflict resolution as moderators. We recommend that other studies use different moderators in their studies, such as project complexity, agile projects, and top management. Cultural values are essential aspects of project success. Future studies may examine their direct and indirect effect on the project's success.

Annexure 1

Construct and Items Used in the Questionnaire

Agile Project Management

- AP1. The project team uses Agile methodologies (e.g., Scrum, Kanban).
- AP2. The project has a clear and concise product vision.
- AP3. The project has a prioritized product backlog.
- AP4. The project team has a dedicated Product Owner.
- AP5. The project team has a dedicated Scrum Master (if Scrum is used).
- AP6. Sprint planning is conducted regularly.
- AP7. Daily stand-ups are conducted regularly.
- AP8. Sprint retrospectives are conducted regularly.
- AP9. The project team uses continuous integration and delivery.
- AP10. The project team measures velocity and tracks progress.

Collaboration

- CL1. Team members openly share information and ideas.
- CL2. We actively listen to each other's perspectives.
- CL3. Our communication is clear and concise.
- CL4. Team members trust each other to do their jobs.
- CL5. We respect each other's opinions and expertise.
- CL6. We resolved conflicts constructively.
- CL7. Our team members support each other.
- CL8. We share resources and expertise.
- CL9. We work together to achieve common goals.
- CL10. Our team members are flexible and adaptable.
- CL11. We adjust plans when necessary.
- CL12. We are open to new ideas and approaches.

Communication

- CM1. I feel comfortable sharing my thoughts and opinions with others.
- CM2. I actively listen to others when they speak.
- CM3. I clearly articulate my ideas and needs.
- CM4. I ask questions to clarify understanding.
- CM5. I provide regular updates on my work progress.
- CM6. I am approachable and open to feedback.
- CM7. I use appropriate tone and language in my communication.
- CM8. I am aware of nonverbal cues and body language.
- CM9. I adapt my communication style to suit different audiences.
- CM10. I follow up to ensure understanding and resolution.

Conflict Resolution

-
- CR1. I address conflicts directly and openly.
-
- CR2. I listen actively to understand the other person's perspective.
-
- CR3. I remain calm and composed in conflict situations.
-
- CR4. I focus on finding a mutually beneficial solution.
-
- CR5. I am willing to compromise to resolve the conflict.
-
- CR6. I clarify expectations and needs to avoid misunderstandings.
-
- CR7. I seek common ground and shared interests.
-
- CR8. I use "I" statements to express feelings and avoid blame.
-
- CR9. I take a break if my emotions become too intense.
-
- CR9. I follow up to ensure the conflict is fully resolved.
-
- CR10. My project output was of high quality
-

Emotional Intelligence

-
- EI1. I am aware of my emotions and how they impact my behavior.
-
- EI2. I can recognize and understand my strengths and weaknesses.
-
- EI3. I am aware of my values and beliefs.
-
- EI4. I can control my emotions and impulses.
-
- EI5. I can manage stress and anxiety.
-
- EI6. I can adapt to changing situations.
-
- EI7. I am driven to achieve my goals.
-
- EI8. I am committed to my personal and professional development.
-
- EI9. I am motivated to help others.
-
- EI10. I can understand and appreciate the feelings of others.
-
- EI11. I am sensitive to the needs and emotions of others.
-
- EI12. I can see things from another person's perspective.
-
- EI13. I am effective in communicating my emotions and needs.
-
- EI14. I can build and maintain strong relationships.
-
- EI5. I can manage conflict and disagreements.
-

Leadership

-
- LS1. I inspire and motivate others to achieve their best.
-
- LS2. I provide clear direction and vision for my team.
-
- LS3. I lead by example and demonstrate ethical behavior.
-
- LS4. I empower others to make decisions and take ownership.
-
- LS5. I communicate effectively and provide regular feedback.
-
- LS6. I build and maintain strong relationships with my team.
-
- LS7. I adapt to changing situations and lead with flexibility.
-

LS8. I prioritize and manage tasks effectively.

LS9. I develop and support the growth of my team members.

LS10. I make informed and timely decisions.

Project Success

PS1. The project was completed within the planned timeframe.

PS2. The project was delivered within the approved budget.

PS3. The project met all its intended objectives.

PS4. The project's quality standards were met or exceeded.

PS5. Stakeholders were satisfied with the project's outcome.

PS6. Team members were satisfied with their roles and responsibilities.

PS7. Communication among team members was effective.

PS8. Project risks were identified and managed effectively.

PS9. The project's benefits were realized as planned.

PS10. Lessons learned were documented and applied to future projects

Team Dynamics

TD1. Team members share a common goal and vision.

TD2. Communication among team members is open and honest.

TD3. Team members respect and trust each other.

TD4. Conflicts are resolved constructively and promptly.

TD5. Team members are committed to the team's success.

TD6. Roles and responsibilities are clear and defined.

TD7. Team members are accountable for their actions.

TD8. Feedback is shared regularly and constructively.

TD9. Team members support and encourage each other.

TD10. Decisions are made collaboratively and inclusively.

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Title: Digital Alchemy: Unraveling the Moderating Roles of Digital Literacy and Employee Engagement

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Conflict of Interest

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Digital Alchemy: Unraveling the Moderating Roles of Digital Literacy and Employee Engagement

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Abstract

Investment in technology enhances firms' efficiency. As a result, they become more competitive and achieve sustainable growth. Factors that directly and indirectly affect digital transformation are human capital, social capital, organizational culture, leadership vision, digital literacy, and employee engagement. We examined the effect of these variables on digital transformation. The study collected data from firms investing in technology. It found that human and social capital, organizational culture, and leadership vision positively affect digital transformation. The study also validates that digital literacy moderates the relationship between human capital and digital transformation. We also found that employee engagement moderates the relationship between leadership vision and digital transformation. Thus, we suggest that firms create a conducive culture where employees are willing to participate and share knowledge. Furthermore, we believe the leadership vision is also important for digital transformation. However, just developing a vision is insufficient; leaders must share their vision with all the firms' stakeholders.

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Keywords: *Human capital, social capital, structural capital, digital transformation, organizational culture, leadership vision, digital literacy, and employee engagement.*

Introduction

In the prevailing technology-driven business environment, organizations' reliance on digital transformation has increased significantly (Cijan et al., 2019). Firms that invest in technologies and innovative processes have significant advantages (Behie et al., 2023). The organizational performance of such firms increases significantly, and their customers are highly satisfied. As a result, they have a competitive advantage (Guo et al., 2023). Moreover, digital transformation improves efficiency by streamlining processes and automating tasks (Nambisan et al., 2019). It also reduces operating costs and increases efficiency, leading to sustainable growth (Joel & Oguanobi, 2024). Furthermore, it enables organizations to understand customer needs, preferences, and behaviors. Consequently, the organization develops a value proposition based on customers' needs (Ismail et al., 2023). Additionally, digital transformation fosters a culture of innovation and expansion through new products, services, and business models (Kraus et al., 2022). Nosratabadi et al. (2024) assert that it allows organizations to respond quickly to changing market conditions, customer needs, and technological advancements (Nosratabadi et al., 2024). Moreover, digital transformation enables organizations to make informed, data-driven decisions (Lyu et al., 2022). Furthermore, it empowers employees to work more efficiently, make better decisions, and develop new skills, increasing job satisfaction and engagement (Nosratabadi et al., 2024). Thus, we argue that digital transformation is critical for achieving business objectives, growth, and long-term success (Guo et al., 2023). Given the above discussions, the study has examined:

1. The impact of the "human capital, social capital, organizational culture, and leadership vision on digital transformation."
2. The moderating role of digital literacy on "the relationship between human capital and digital transformation."
3. The moderating role of employee engagement on "the relationship between leadership vision and digital transformation."

Literature Review

Digital Transformation

In the prevailing technological era, digital transformation is crucial for a firm's growth

and sustainability (Kraus et al., 2022). Digital transformation refers to integrating digital technology into all areas of a business. It includes changing how the business operates and delivers customer value (Cijan et al., 2019). It has numerous benefits, including delivering personalized and seamless customer experiences and developing new business models, products, and services (Joel & Oguanobi, 2024). Moreover, it allows organizations to stay ahead of competitors in the digital age and reduce costs through automation and efficiency (Nambisan et al., 2019). Despite its advantages, digital transformation presents several challenges (Nambisan et al., 2019). It includes resistance to change, lack of digital skills, cybersecurity risks, data management, and integration complexity (Kraus et al., 2022). However, researchers believe a strategic approach and cultural transformation can help organizations overcome these hurdles and achieve sustainable business growth (Cijan et al., 2019).

Human Capital

Human capital refers to the “skills, knowledge, experience, and abilities” of an organization's workforce, encompassing the collective value of its human resources (Birkbeck & Rowe 2024). Besides other factors, it includes employees' education, training, expertise, and competencies (Lee & Zhao, 2023). Deming (2022) asserts that firms with skilled and knowledgeable employees are better equipped to adapt to changing market conditions and deliver excellent customer service (Lee & Zhao, 2023). Researchers suggest that firms invest in employee development (Abbas et al., 2024). Moreover, firms must monitor and evaluate human capital development (Serenko, 2024). Google, Amazon, and IBM have successfully implemented human capital strategies in their companies. As a result, they have improved productivity and achieved business success (Prabhakar et al., 2023).

Social Capital

Social capital refers to the “networks, relationships, and norms of trust” within organizations and societies. It allows individuals and groups to work together effectively (Annamalah et al., 2023). Moreover, social capital facilitates access to information and opportunities and reduces social isolation and inequality (Sabet & Khaksar, 2024). However, researchers assert that social capital can be eroded by social isolation, inequality, and cultural and language barriers (Mishchuk et al., 2022). To address these challenges, organizations must prioritize social capital development and invest in initiatives that promote community engagement, volunteerism, and social connections (Dias et al., 2024). Moreover, by adopting a comprehensive approach to social capital development, organizations can build stronger, more resilient relationships (Mishchuk et al., 2023).

Organizational Culture

Organizational culture refers to an organization's "shared values, beliefs, and norms" (Orienson et al., 2024). It also includes unwritten rules, customs, and traditions (Palumbo & Douglas2024). Thus, an organizational culture guides employees in interacting and behaving with each other and external stakeholders (Siswadi et al., 2023). Researchers believe a strong organizational culture promotes collaboration, and drives business success (Pratiwi & Amini, 2023). Moreover, a clear sense of purpose, shared values, and open communication characterize a positive organizational culture (Nabella et al., 2022). Furthermore, a positive organizational culture also promotes a sense of ownership and accountability, empowering employees to take initiative and make decisions (Orienson et al., 2024). Conversely, a toxic culture can lead to low morale, high turnover, and decreased productivity (Palumbo & Douglas2024). It can also hinder innovation and creativity and damage the organization's reputation (Siswadi et al., 2023).

Leadership Vision

Leadership vision is the capability of leaders to share their visions with the employees and all the company's stakeholders (Pedaste et al., 2024). A well-articulated vision provides a sense of direction to the employees (AlKayid et al., 2023). As a result, employees' motivation and inspiration increased, and they worked together toward a common goal (Vinh et al., 2022). Kim et al. (2023) assert that leaders possess unique skills (Zhou & Reynaldo, 2024). It includes the ability to anticipate future trends and challenges, communicate effectively, and foster a culture of teamwork and collaboration (Bashori et al., 2022). Researchers believe organizational success significantly depends on a clear and compelling vision (Kim et al., 2023). Furthermore, a strong leadership vision fosters a culture of accountability, empowerment, and continuous improvement, driving employees to take ownership of their work (Pedaste et al., 2024). Additionally, researchers believe visionary leaders are genuinely passionate about their organization's mission and values, inspiring others to share their enthusiasm (Vinh et al., 2022).

Digital Literacy

Digital literacy is the effective use of digital technologies to access, evaluate, and create information (Nguyen & Habók,2024). It includes technical proficiency, critical thinking, and online safety awareness (López et al., 2023). Researchers assert that digital literacy is essential for individuals to access information and take advantage of economic opportunities in the prevailing digital era (Diseiye et al., 2024). Moreover, it allows individuals to navigate the internet, use digital tools, and communicate effectively online (Tinmaz et al., 2022). Furthermore, researchers assert that digital literacy involves more than just basic computer skills; it requires a deep understanding of how to use technology to achieve specific goals (Veronika et al., 2023). Additionally, digital literacy

is critical for employability, as most jobs require digital proficiency (Farias-Gaytan et al., 2023). Researchers believe there is a huge disparity in individuals in terms of digital literacy. Some individuals are highly comfortable using digital technologies (Nguyen & Habók, 2024). Others lack the skills and confidence to use digital technologies (López et al., 2023).

Employee Engagement

Employee engagement is necessary for job satisfaction, productivity, and organizational performance (Susanto et al., 2023). A highly engaged employee tends to have emotional and cognitive attitudes and behavior (Pincus, 2023). Consequently, it increases productivity, job satisfaction, and organizational success (Susanto & Sawitri, 2022). Kwon et al. (2024) believe it involves an emotional connection to the organization and its mission, feeling valued and supported. Moreover, extending the above arguments, we argue that engaged employees are more productive, satisfied, and likely to stay with the organization (Al Zeer et al., 2023). Consequently, this improves customer satisfaction (Saks et al., 2023). By focusing on employee engagement, we argue that firms promote a conducive working environment to enhance organizational performance (Kwon et al., 2024).

Hypotheses Development

Human Capital and Digital Transformation

Winarsih et al. (2024) assert that effective human capital management is necessary for successful digital transformation. Many past studies have noted that digital transformation includes developing a “digital transformation strategy” that aligns with business objectives (Qureshi, 2023). Moreover, investing in digital skills training and fostering a culture of innovation is necessary for digital transformation (Nwankpa et al., 2022). Researchers believe the impact of human capital on digital transformation is multifaceted (Winarsih et al., 2024). It allows firms to develop innovative digital products and services, improve operational efficiency, and enhance customer satisfaction (Winarsih et al., 2024). Moreover, it facilitates the adoption of digital technologies, ensuring successful implementation and integration (Qureshi, 2023). Nwankpa et al. (2022) assert that human capital helps manage organizational change, minimizing resistance and ensuring a smooth transition (Qureshi, 2023). Researchers believe organizations can achieve sustainable business growth by prioritizing human capital development (Nwankpa et al., 2022).

H1: Human capital “positively affects digital transformation.”

Social Capital and Digital Transformation

Social capital is a crucial precursor of digital transformation, allowing firms to leverage relationships and networks and achieve business outcomes (Nguyen et al., 2023). The value derived from social relationships is crucial in facilitating collaboration, innovation, and knowledge sharing (Nosratabadi et al., 2024). Moreover, strong social capital in firms promotes the knowledge and expertise of their stakeholders to drive digital transformation (Lyu et al., 2022). As a result, it enables organizations to access new ideas, technologies, and markets, leading to sustainable business growth (Gallardo-Vázquez et al., 2019).

Malike et al. (2024) assert that effective social capital management is critical for successful digital transformation. Therefore, firms must develop a social capital strategy that aligns with their digital transformation objectives (Nguyen et al., 2023). It includes investing in network development, building trust through stakeholder engagement, and fostering a collaborative culture (Nosratabadi et al., 2024). Moreover, leadership plays a crucial role in championing social capital and digital transformation, ensuring that stakeholders are empowered to collaborate and innovate (Lyu et al., 2022).

H2: Social capital “positively affects digital transformation.”

Organizational Culture and Digital Transformation

Extant literature asserts that organizational culture is pivotal in digital transformation (Dąbrowska et al., 2024). It either facilitates or hinders the adoption and implementation of digital technologies (Martínez-Peláez et al., 2023). Moreover, a culture that supports innovation, experimentation, and collaboration is essential for successful digital transformation (Lyu et al., 2024). Additionally, when an organization's culture prioritizes innovation, it fosters creativity and innovation, developing new digital products and services (Guo et al., 2023). Adama et al. (2023) assert that a collaborative culture enables effective teamwork and communication. As a result, it ensures that all stakeholders are aligned and working towards a common goal (Adama et al., 2023). Furthermore, a culture that values adaptability enables organizations to respond quickly to changing market conditions, staying ahead of the competitors (Martínez-Peláez et al., 2023). Organizational culture often resists change, which can hinder the adoption and implementation of digital technologies (He et al., 2023). To mitigate this resistance, organizations must address resistance to change through effective communication and stakeholders' engagement (Guo et al., 2023). Furthermore, by prioritizing organizational culture, organizations can unlock the full potential of digital transformation, drive innovation, and achieve sustainable business growth (Adama et al., 2023).

H3: Organizational culture “positively affects digital transformation.”

Leadership Vision and Digital Transformation

Extant literature highlights that leadership vision plays a pivotal role in digital transformation, setting the direction and tone for the organization's digital journey (McCarthy et al., 2022). Moreover, leadership vision inspires and motivates employees and stakeholders, ensuring everyone is aligned and working towards a common goal (Türk et al., 2023). Researchers believe that leadership vision provides direction and purpose, fostering a sense of unity and coordination across the organization (Müller et al., 2024). Moreover, a leader's clear and concise vision empowers employees to take ownership of the digital transformation journey, driving innovation and experimentation (AlNuaimi et al., 2022). Furthermore, a well-articulated vision facilitates change management, helping employees navigate the transition to new digital technologies and ensuring a smooth adoption process (Yansen et al., 2023). However, a rigid vision may not promote digital transformation (Reuter et al., 2024).

H4: Leadership vision “positively affects digital transformation.”

Human Capital, Digital Literacy, and Digital Transformation

Extant literature documents that digital literacy positively moderates the relationship between human capital and digital transformation (Mykhailovska et al., 2024). Qaribilla et al. (2024) assert that the effectiveness of human capital in promoting digital transformation significantly depends on digital literacy (Perdana et al., 2024). Moreover, employees with high levels of digital literacy can effectively utilize digital technologies, making their skills and knowledge more relevant and valuable in the digital economy (Sofyan et al., 2024). Furthermore, digital literacy enhances employee productivity, facilitates data-driven decision-making, drives innovation, and enables employees to adapt quickly to changing market conditions. Additionally, digital literacy facilitates adopting and implementing digital technologies, ensuring a smoother transition and accelerating digital transformation (Mykhailovska et al., 2024). Conversely, low digital literacy impedes the adoption and implementation of digital technologies and hinders digital transformation (Qaribilla et al., 2024).

H5: Digital literacy “moderates the relationship between human capital and digital transformation.”

Leadership Vision Employee Engagement and Digital Transformation

Employee engagement plays a crucial moderating role in the relationship between leadership vision and digital transformation (Shwedeh et al., 2023). Leadership vision

is essential for driving digital transformation, as it sets the direction and tone for the organization's digital journey (Mutha & Srivastava,2023). However, the effectiveness of leadership vision in driving digital transformation is significantly influenced by the level of employee engagement (Ulrich et al., 2023). Highly engaged employees are likelier to take ownership of the digital transformation journey, driving motivation, commitment, and involvement (Mutha & Srivastava,2023). Moreover, employee engagement amplifies the impact of leadership vision, facilitating the adoption and implementation of digital technologies and accelerating digital transformation (Turyadi et al., 2023). Furthermore, employee engagement fosters collaboration and teamwork, driving innovation and enabling employees to adapt quickly to changing market conditions (Shwedeh et al.,2023).

H6: Employee engagement “moderates the relationship between leadership vision and digital transformation.”

Conceptual Framework

The developed conceptual framework depicted in Figure 1 shows the articulated. Hypotheses. It has “four direct and two moderating relationships.”

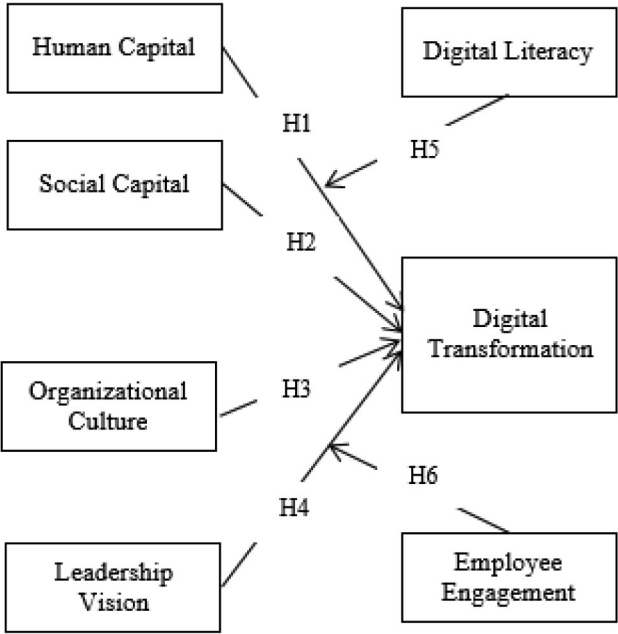


Figure 1: Conceptual Framework

Methods

Research Approach and Sampling

The study used quantitative research, which involves collecting data through questionnaires (May & Perry, 2022). Researchers believe quantitative research offers objectivity, reliability, generalizability, precision, and scalability (Lilien et al., 2022). However, limitations include lack of depth, assumption of linearity, measurement errors, and dependence on statistical assumptions (Zikmund et al., 2020). Moreover, the study used a deductive approach. It calls for developing relationships based on theory and numerically testing the articulated hypotheses (Hair et al., 2017).

A research population is the entire group of individuals, organizations, or entities a researcher aims to study (Sekaran & Bougie, 2020). It includes all potential participants sharing common characteristics relevant to the research questions. On the other hand, a target population is a subset of the research population (Zikmund et al., 2020). It is the specific group the researcher intends to study. The target population for this was the firms that employ digital transformation.

Researchers suggest drawing a sample from a large target population as it is not time-consuming and efficient. The study calculated that a “sample size” of 410 would be appropriate (Indicator variables 41 X 10 samples per case) (Creswell, 2019). The study used purposeful sampling, a non-probability sample technique.

Statistical Analysis

The study used Smart PLS for statistical analysis. We prepared the data set initially to ensure it aligned with the software's requirements (Ringle & Sarstedt, 2022). Subsequently, we specified the research model defining the relationships between variables and the hypotheses to be tested. Then, we run the PLS algorithm to estimate the model parameters. Finally, we interpreted the results and drew a conclusion based on the findings (Hair et al., 2022).

Scale and Measures

A 5-rater Likert scale was employed to measure responses. “One indicates a high degree of disagreement, and five shows a high degree of agreement.” The study has “seven latent and 41 indicator variables,” detailed in Table 1.

Table 1: Scale and Measures

Variables	Sources	Items
Human Capital	Lee and Zhao(2023	6
Organizational Culture	Palumbo and Douglas(2024)	6
Leadership Vision	Kim et al (2023)	5
Digital Literacy	Nguyen and Habók (2024)	6
Employee Engagement	Susanto et al, (2023)	7
Digital Transformation	Cijan et al. (2019)	5
Social Capital	Annamalah et al., (2023)	6

Results

Respondent Profile

The research sample consists of 410 observations. The results show that 22.18% of respondents are from software houses, 24.81 % are from insurance firms, 30.83% are from the education sector, and 22.18% are from healthcare. Regarding gender, we found that 59% are males, and 51% are females. Educational profile suggests 52% of respondents have Master's degrees, 39% have a bachelor's degree, and 9% have an intermediate level of education.

Measurement Model

Extant literature suggests a two-phase approach for PLS Models: One generates a measurement model to assess the relationship between the observed variables and their corresponding latent variables. Second, a structural model, which shows the relationship between latent variables.

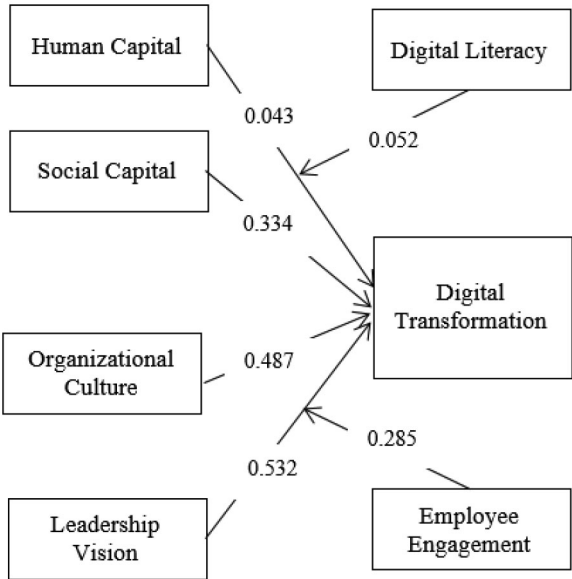


Figure 2: Measurement Model

Reliability and Validity

Table 2 shows the factor loading of the constructs’ indicators. It also shows the Cronbach Alpha, composite reliability, and AVE values of all the latent variables.

Table 2. Measurement Items

Variables	Items	Loadings	Cronbach's Alpha values	Compost Reliability	Average Variance Extracted
Human Capital	HC1	0.834	0.814	0.945	0.646
	HC2	0.716			
	HC3	0.896			
	HC6	0.757			
Social Capital	SC1	0.840	0.856	0.903	0.653
	SC2	0.753			
	SC4	0.778			
	SC6	0.812			
Organizational Culture	OC1	0.881	0.856	0.903	0.699
	OC2	0.862			
	OC3	0.822			
	OC4	0.776			

OC5	0.779				
Leadership Vision	LV1	0.834	0.814	0.945	0.646
	LV2	0.716			
	LV3	0.896			
	LV4	0.837			
	LV5	0.786			
Digital Literacy	DL1	0.800	0.883	0.915	0.683
	DL2	0.840			
	DL3	0.809			
	DL4	0.773			
	DL5	0.815			
Employee Engagement	EE1	0.789			0.712
	EE2	0.815			
	EE3	0.833			
	EE4	0.725			
	EE7	8.793			
Digital Transformation	DT1	0.769			0.695
	DT2	0.778			
	DT3	0.777			
	DT4	0.784			
	DT6	0.814			

All values for composite reliability are above the specified minimum threshold of 0.700. The Cronbach's Alpha values exceeded the minimum required values of 0.700. All constructs' average variance extracted (AVE) values surpassed the minimum threshold of 0.500 (Hair et al., 2017). Thus, the "constructs used in the study are within the prescribed limits of convergent validity."

Discriminant Validity (Fornel & Larcker, 1981)

The study used Fornell and Larcker's (1981) criteria for assessing discriminant validity. Table 3 shows that the "square roots of AVE values are greater than correlation values, suggesting the constructs used in the study are unique and distinct."

Table 3. Fornell – Larcker Criterion

Variables	HC	OC	LV	DL	EE	DT	SC
Human Capital	0.902						
Organizational Culture	0.630	0.836					
Leadership Vision	0.438	0.540	0.804				
Digital Literacy	0.535	0.320	0.431	0.828			
Employee Engagement	0.478	0.517	0.523	0.593	0.844		
Digital Transformation	0.534	0.531	0.436	0.678	0.758	0.834	
Social Capital	0.537	0.613	0.621	0.150	0.569	0.666	0.808

Hypothesis Results

The study articulated four direct and two moderating hypotheses, which our results supported. Table 4 summarizes the results, and Figure 3 shows the structural model.

Table 4: Discriminant Validity

Relationships	B	t-value	p-value	Results
Human Cap -> Digital Transformation (H1)	0.043	2.372	0.011	Validated
Social Cap ->Digital Transformation (H2)	0.334	4.416	0.000	Validated
Org. Culture ->Digital Transformation (H3)	0.478	6.533	0.000	Validated
Leader. Vision->Digital Transformation (H4)	0.532	11.193	0.000	Validated
Dig. Literacy X Human. Cap-> Digital Trans. (H5)	0.052	2.374	0.017	Validated
E. Engagement X L. Vison > Dig. Trans. (H6)	0.285	4.712	0.000	Validated

We found support for all the articulated hypotheses. The strongest effect is in Hypothesis 4 ($\beta=0.532$, $t= 11.193$, <0.05), followed by Hypothesis 3 ($\beta=0.478$, $t=6.533<0.05$), Hypothesis 2 ($\beta=0.344$, $t=4.416<0.05$), Hypothesis 6 ($\beta=0.285$, $t=4.712<0.05$), Hypothesis 5 ($\beta=0.052$, $t=2.374<0.05$), and Hypothesis 1($\beta=0.043$, $t=2.372<0.05$).

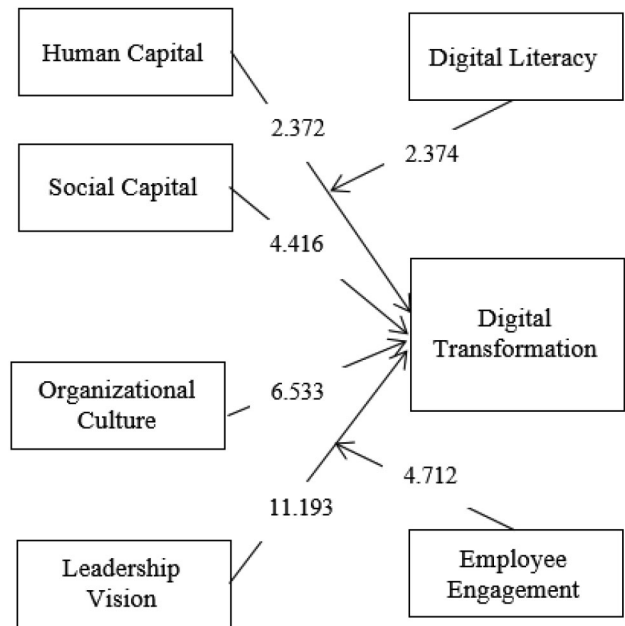


Figure 3: Structural Model

Discussion and Conclusion

Discussion

The study “validates human capital positively affects digital transformation.” Winarsih et al. (2024) assert that effective human capital management is necessary for successful digital transformation. Many past studies have noted that digital transformation strategy includes developing a “digital transformation strategy” that aligns with business objectives (Qureshi, 2023). Moreover, investing in digital skills training and fostering a culture of innovation is necessary for digital transformation (Nwankpa et al., 2022). Researchers believe the impact of human capital on digital transformation is multifaceted (Winarsih et al., 2024). It allows firms to develop innovative digital products and services, improve operational efficiency, and enhance customer satisfaction (Winarsih et al., 2024). Moreover, it facilitates the adoption of digital technologies, ensuring successful implementation and integration (Qureshi, 2023).

We “found that social capital positively affects digital transformation.” Social capital is a crucial precursor of digital transformation, allowing firms to leverage relationships and networks and achieve business outcomes (Nguyen et al., 2023). The value derived from social relationships is crucial in facilitating collaboration, innovation, and knowledge

sharing (Nosratabadi et al., 2024). Moreover, strong social capital in firms promotes the knowledge and expertise of their stakeholders to drive digital transformation (Lyu et al., 2022). As a result, it enables organizations to access new ideas, technologies, and markets, leading to sustainable business growth (Gallardo-Vázquez et al., 2019).

The “study documents that organizational culture promotes digital transformation.” Extant literature asserts that organizational culture is pivotal in digital transformation (Dąbrowska et al., 2024). It either facilitates or hinders the adoption and implementation of digital technologies (Martínez-Peláez et al., 2023). Moreover, a culture that supports innovation, experimentation, and collaboration is essential for successful digital transformation (Lyu et al., 2024). Additionally, when an organization's culture prioritizes innovation, it fosters creativity and innovation, developing new digital products and services (Guo et al., 2023). Lyu et al. (2022) asserts that a collaborative culture enables effective teamwork and communication. As a result, it ensures that all stakeholders are aligned and working towards a common goal (Adama et al., 2023). Furthermore, a culture that values adaptability enables organizations to respond quickly to changing market conditions, staying ahead of the competitors (Martínez-Peláez et al., 2023).

The “study documents that leadership vision promotes digital transformation. Extant literature highlights that leadership vision plays a pivotal role in digital transformation, setting the direction and tone for the organization's digital journey (McCarthy et al., 2022). Moreover, leadership vision inspires and motivates employees and customers, ensuring everyone is aligned and working towards a common goal (Türk et al., 2023). Researchers believe that leadership vision provides direction and purpose, fostering a sense of unity and coordination across the organization (Müller et al., 2024). Moreover, a leader's clear and concise vision empowers employees to take ownership of the digital transformation journey, driving innovation and experimentation (AlNuaimi et al., 2022). Furthermore, a well-articulated vision facilitates change management, helping employees navigate the transition to new digital technologies and ensuring a smooth adoption process (Yansen et al., 2023).

We found “that digital literacy moderates the relationship between human capital and digital transformation.” Extant literature documents that digital literacy positively moderates the relationship between human capital and digital transformation (Mykhailovska et al., 2024). Qaribilla et al. (2024) assert that the effectiveness of human capital in promoting digital transformation significantly depends on digital literacy (Perdana et al., 2024). Moreover, employees with high levels of digital literacy can effectively utilize digital technologies, making their skills and knowledge more relevant and valuable in the digital economy (Sofyan et al., 2024). Furthermore, digital literacy

enhances employee productivity, facilitates data-driven decision-making, drives innovation, and enables employees to adapt quickly to changing market conditions.

The study “validates that employee engagement moderates the relationship leadership vision digital transformation.” Employee engagement plays a crucial moderating role in the relationship between leadership vision and digital transformation (Shwedeh et al.,2023). Leadership vision is essential for driving digital transformation, as it sets the direction and tone for the organization's digital journey (Mutha & Srivastava,2023). However, the effectiveness of leadership vision in driving digital transformation is significantly influenced by the level of employee engagement (Ulrich et al., 2023). Highly engaged employees are likelier to take ownership of the digital transformation journey, driving motivation, commitment, and involvement (Mutha & Srivastava,2023). Moreover, employee engagement amplifies the impact of leadership vision, facilitating the adoption and implementation of digital technologies and accelerating digital transformation (Turyadi et al., 2023).

Conclusion

In the prevailing technological era, digital transformation has become more significant. Firms that invest in digital technology are more competitive than firms that do not. Given its importance, the study examined the effect of four antecedents and two moderators on digital transformation. The study collected data from firms investing in technology. Results show that “human capital, social capital, organizational culture, and leadership vision positively affect digital transformation.” The study also validates that “digital literacy moderates the relationship between human capital and digital transformation.” We also found that “employee engagement moderates the relationship between leadership vision and digital transformation.”

Implications

Human capital is a key driver of digital transformation. We advise firms to invest in human capital development, which catalyzes innovation, productivity, and competitiveness. This investment minimizes the risks associated with digital transformation and empowers firms to harness its power and achieve sustainable business growth.

Social capital plays a crucial role in digital transformation, with far-reaching implications. By recognizing its positive and negative effects, organizations can create targeted strategies to leverage it, foster innovation, and enhance social inclusion. As the digital landscape continues to evolve, the significance of social capital will grow even more, making it vital for organizations to focus on developing it to remain

competitive. By prioritizing social capital, organizations can harness the potential of digital transformation and achieve sustainable business growth.

Organizational culture significantly impacts digital transformation, and its implications are far-reaching. We recommend that firms understand its positive and negative implications. This will help firms develop targeted strategies to create a culture that supports digital transformation and drives business growth. By following the right strategies, organizations can harness the power of digital transformation and achieve sustainable business growth.

Limitations and Future Research

The study collected data from the employees of the organizations investing in technology. All the selected business entities are Karachi-based. We advise others to extend our developed conceptual framework to other cities in Pakistan. We have examined the impact of human capital, social capital, organizational culture, and leadership vision on digital transformation. Other studies may also expand the conceptual framework by adding more antecedents, such as attitudes and behavior toward technology and change management. We have used two moderators, including leadership vision and employee engagement, with no mediating variables. Thus, we suggest that future researchers add more moderators and include mediating variables.

Annexure 1

The Constructs and Items Used in the Questionnaires

Digital Transformation

DT1. Digital transformation enables organizations to stay ahead of the competition by adopting new technologies, innovating processes, and improving customer experiences.

DT2. Digital transformation streamlines processes, automates tasks, and enhances productivity, leading to cost savings and increased efficiency.

DT3. Digital transformation enables organizations to better understand customer needs, preferences, and behaviors, leading to personalized experiences and improved customer satisfaction.

DT4. Digital transformation fosters a culture of innovation, enabling organizations to develop new products, services, and business models and driving growth and expansion.

DT5. Digital transformation enables organizations to respond quickly to changing market conditions, customer needs, and technological advancements.

Human Capital

HC1. My organization encourages continuous learning and improvement.

HC2. My organization recognizes and values my work.

HC3. My organization has a strong leadership team.

HC4. My organization encourages collaboration and knowledge sharing.

HC5. My organization trusts employees to make decisions.

HC6. My organization supports my career goals and aspirations.

Social Capital

SC1. We share knowledge and resources within the team.

SC2. We work together to achieve common goals.

SC3. We share best practices and lessons learned.

SC4. We show empathy and understanding towards each other.

SC5. We work towards shared goals and objectives.

SC6. Our team is involved in community service activities.

Organizational Culture

OC1. Our organization encourages innovation and experimentation.

OC2. Our organization prioritizes customer satisfaction and needs.

OC3. Our organization values and celebrates diversity.

OC4. Leaders and managers are approachable and supportive.

OC5. Our organization is agile and responsive to change.

OC6. We take ownership and accountability for our actions.

Leadership Vision

LV1. Our leader has a clear and compelling vision for the organization. LV

LV2. Our leader inspires and motivates me to work towards the vision.

LV3. Our leader has a deep understanding of the industry and market trends.

LV4. Our leader communicates effectively with all stakeholders.

LV5. Our leader sets clear goals and expectations.

Digital Literacy

DL1. I am comfortable using a computer and basic software applications.

DL2. I know how to protect my personal information online.

DL3. I can effectively search for and evaluate online information.

DL4. I am comfortable using email and instant messaging.

DL5. I am comfortable experimenting with new digital technologies.

DL6. I understand my rights and responsibilities online.

Employee Engagement

EE1. I am satisfied with my job overall.

EE2. I am committed to the organization's mission and values.

EE3. I feel comfortable approaching my manager with questions or concerns.

EE4. We work together effectively as a team.

EE5. I have opportunities for growth and development.

EE6. I have a good balance between work and personal life.

EE7. I receive regular communication from leadership.

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Conflict of Interest

The author (s) declared no conflict of interest and have not received any funds for the project.

Factors Affecting Passenger Attitudes towards Low-Cost Carriers

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Abstract

LCCs have a positive impact on the economies. For example, it includes generating employment, stimulating depressed economies, and contributing toward GDP. Extant literature also highlights that the LCC's business model increased productivity and efficiency, forcing others in the industry to adopt this model. Moreover, many researchers noted that because of this innovative model, airlines could connect to nonviable destinations. Furthermore, due to this innovative model, LCCs share has increased significantly. Researchers believe it will increase more profoundly. The study has proposed and tested six direct and six mediating hypotheses. We collected the data from local Pakistani travelers. We found that "low prices, access of passengers, technological self-efficacy, passenger loyalty, and airline reputation positively affect attitude towards LCCs." The "study highlighted that airline safety insignificantly affects LCCs. We also "examined the mediating role of passenger satisfaction between the above antecedents and attitude towards" LCCs. The study accepted all the mediating relationships except Hypothesis 12: "Passenger satisfaction mediates airline safety and LCCs."

Keywords: *Prices, access of passengers, technological efficacy, passenger loyalty, airline reputation, and airline safety on low-cost carriers.*

Introduction

In the prevailing competitive era, airline costs worldwide have increased significantly.

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As a result, a large segment cannot afford to travel by air (Koharudin & Simarmata, 2024). To make air travel more affordable for a wider audience, the aviation industry recently launched low-cost carriers (LCCs) (Efthymiou & Christidis, 2023). As a result, the demand for the segment that could not travel due to high airline fares has increased (Herjanto et al., 2022). Moreover, it has forced traditional carriers to innovate their products and services (Kanrak et al., 2024). Additionally, LCCs have positively affected the economies (Efthymiou & Christidis, 2023). For example, it has generated employment, stimulated depressed economies, and contributed toward GDP (Maulana et al., 2024). Extant literature also highlights that the LCCs business model increased productivity and efficiency, forcing others in the industry to adopt this model (Zou et al., 2022). Moreover, many researchers noted that because of this innovative model, airlines could now connect to destinations that were not financially viable (Shrago, 2024). Thus, we argue that this LCC model has become an essential component of the aviation industry (Efthymiou & Christidis, 2023).

The aviation industry in Pakistan has also adopted this model (Shahid, 2022). Thus, air travel in Pakistan is now more affordable and accessible (Rana & Ameen, 2023). PIA, Pakistan's national carrier, traditionally offered high-priced fares and had little focus on services (Zulqurnain et al., 2023). However, due to the LCCs, PIA now offers competitive fares and better services (Ali & Iqbal, 2024). Moreover, due to the entry of private airlines such as Air Blue and Fly Dubai, local passengers now have more travel options (Farooq et al., 2023). Furthermore, LCCs in Pakistan have increased employment opportunities, stimulated depressed local economies, and attracted foreign investment (Watandar et al., 2023). The study has extended the "Customer Value Theory" and examined:

1. The impact of "prices, access of passengers, technological efficacy, passenger loyalty, airline reputation, and airline safety on attitude towards LCCs.
2. The mediating roles of customer satisfaction between the above variables and attitudes toward LCCs.

Literature Review

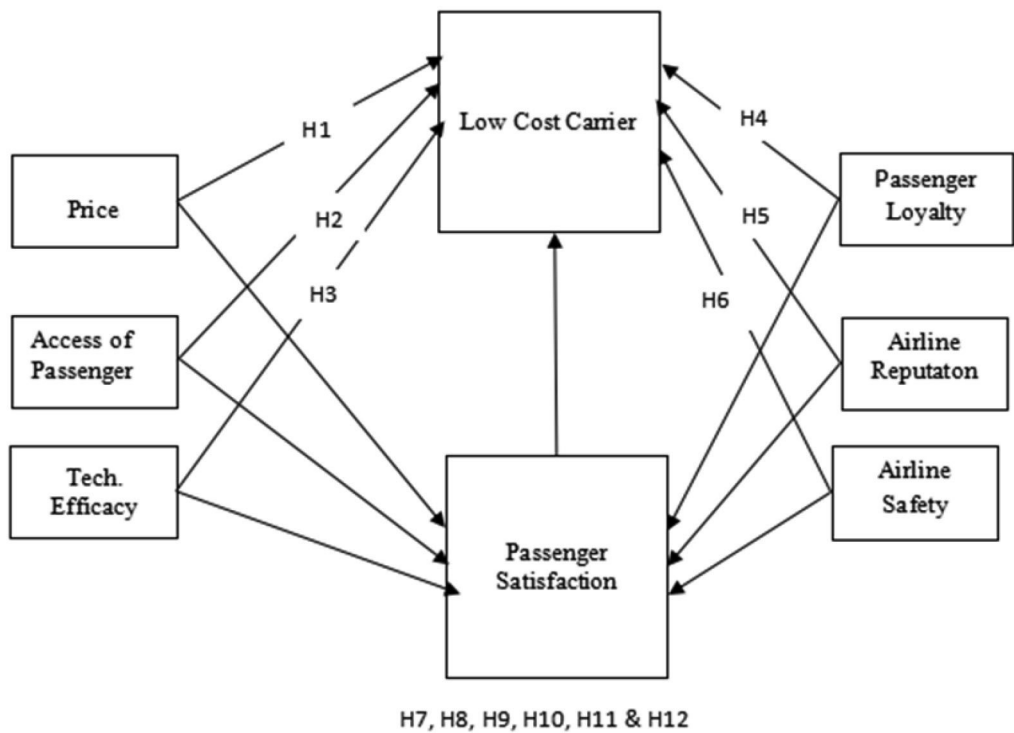
Customer Value Theory

Customer Value Theory (CVT) suggests that purchasing decisions significantly depend on the expected value proposition of goods and services (Sharma et al., 2024). In the context of LCCs in Pakistan, the CVT postulates that Pakistani travelers expect affordable fares, convenient schedules, and efficient airline service (Islam et al., 2023). Erturgut and Gürlür (2023) assert that LCCs provide affordable transportation from one destination

to another (Ismat et al., 2023). However, while traveling, customers expect a safe, reliable, and comfortable flight experience (Akram et al., 2022). Besides providing these basic needs, LCCs can increase customer satisfaction by providing additional services, including priority check-in, food, and beverages (Ali & Iqbal, 2024). Mandasari et al. (2022) assert that LCCs can create customer value by focusing on functional, emotional, and social values. Functional values include “efficient services, convenient schedules, and affordable fares.” Social values include “opportunities for social interactions” (Arul & Tahir, 2023). Economic values include “competitive pricing, discounts, and promotions” (Ashiq & Hussain, 2024). Thus, by understanding these values, LCCs in Pakistan can develop a value proposition that addresses customer needs and increases customer satisfaction (Nizam et al., 2022). This new proposition may give LCCs an edge, resulting in sustainable growth and profitability (Ali et al., 2024).

Conceptual Framework

By extending the “Customer Value Theory,” we proposed a new model depicted in Figure 1, “with six direct and six mediating hypotheses.”



Hypothesis Development

Price and LCCs

Many studies highlighted that “air travel prices positively affect attitudes toward LCCs” (Nurhidayat et al., 2023). Passengers in developing countries like Pakistan are highly price-sensitive (Du et al., 2024). If an airline's fares change slightly, they will switch to other carriers (Syahailatua et al., 2022). On the contrary, researchers believe that before making buying decisions, passengers compare the prices with the quality of services, amenities, and flexibility. If they feel the price gives them more value for the money, they will buy the ticket irrespective of the price (Karaağaoğlu & Gündüz, 2023). Moreover, consumers' perceptions of value for money are not the same. They vary from consumer to consumer (Karaağaoğlu et al., 2022). For example, the value-for-money perception of a carrier of one customer may be high (Kaffash & Khezrimotlagh, 2023). The same value for money perception for another customer would be low (Kanrak et al., 2024).

H1: Prices “positively affect attitude towards LCCs.”

Access of Passenger and LCCs

Researchers argue that passengers' attitudes toward carriers profoundly depend on many factors, including “convenient access to airports, transportation options, and booking processes” (Nurhidayat et al., 2023). Moreover, travelers choose LCCs that are easily accessible, as this saves time (Gualini, 2024). Furthermore, travelers are more attracted to an airline whose booking system is user-friendly (Herjanto et al., 2022). Besides the above-discussed facilities, technology, and online booking systems positively affect passengers' attitudes toward LCCs (Nurhidayat et al., 2023). However, it varies from customer to customer (Efthymiou & Christidis, 2023). Passengers comfortable using technology have positive attitudes toward LCCs (Du et al., 2022). In contrast, passengers who are uncomfortable using technology will have a negative attitude toward LCCs (Kaffash & Khezrimotlagh, 2023).

H2: Access of passenger “positively affects attitude towards LCCs.”

Technological Self-Efficacy and Attitude towards LCCs

Technology self-efficacy refers to individuals' ability to use digital technology (Capistrano et al., 2023). Thus, passengers with high technological self-efficacy would have a positive attitude toward LCCs (Chow et al., 2022). Padmaningrum et al. (2024) noted that LCCs could reduce costs by digitally offering online facilities such as booking, check-in, and other travel arrangements (Islam, 2023). However, researchers believe that passengers who are comfortable using technology appreciate these online

facilities (Ogegbo et al., 2024). On the other hand, passengers with low technological self-efficacy prefer personalized services (Nyman et al., 2022). Therefore, their attitudes toward technology self-efficacy would be low (Wachukwu et al., 2023).

H3: Technology self-efficacy “positively affects attitude towards LCCs.”

Passenger Loyalty and Attitude towards LCCs

Maulana et al. (2024) noted that consumers with a pleasant experience with an LCC are more loyal to it (Karaağaoğlu & Gündüz, 2023). Moreover, LCCs that offer rewards and frequent flyer benefits increase passengers' loyalty (Erdağ et al., 2024). Furthermore, passengers' perception of belonging to an LCC increased their loyalty (Herjanto et al., 2022). Additionally, passengers' loyalty toward an LCC depends on “price, convenience, and service quality.” (Kethüda et al., 2023). These aspects individually and collectively positively affect passenger attitudes towards LCCs. Kanchanaet et al. (2024) believe that passengers' overall loyalty toward LCCs positively affects their attitudes toward LCCs (Lin, 2022).

H4: Passenger loyalty “positively affects attitude towards LCCs.”

Airline Reputation and LCCs

Researchers believe a “reliable, trustworthy” LCC increases its reputation (Chand et al., 2024). Consequently, passengers develop a positive attitude towards such a LCC (Herjanto et al., 2022). Moreover, researchers assert that passengers develop a positive attitude towards LCCs with a strong reputation for “customer service and overall quality” (Chang & Ku, 2023). In contrast, passengers would have negative attitudes toward LCCs with poor reputations despite offering lower prices than competitors (Kim & Hwang, 2023). Moreover, passengers tolerate any shortcomings of a reputed LCC (Shrago, 2024). Furthermore, LCCs' online reviews on social media increase their reputation, making them more attractive to passengers (Lee et al., 2022).

H5: Airline reputation “positively affects attitude towards LCCs.”

Airline Safety and LCCs

Many antecedents affect passengers' attitudes toward LCCs. However, studies have noted that airline safety is the most important antecedent (Koharudin & Simarmata, 2024). Moreover, LCCs with a strong safety reputation increase passengers' confidence, leading to positive attitudes toward them (Thongkruer & Wanarat, 2023). On the other hand, safety concerns adversely affect passengers' attitudes toward LCCs, even if they offer lower fares than competitors (Herjanto et al., 2022). Researchers noted that airlines

that compromise on safety to reduce costs would promote negative attitudes (Chand et al., 2024). Moreover, safety certifications and transparent communication about safety measures enhance LCCs's reputation, leading to passengers' positive attitudes towards such LCCs (Reginio & Kankaew, 2023). Furthermore, researchers believe that passengers may compromise on other aspects but not on safety (Ra, 2024).

H6: Airline safety “positively affects attitude towards LCCs.”

Price, Passenger Satisfaction, and Attitude towards LCCs

Koharudin and Simarmata (2024) assert that passengers' perception of the price of LCCs being reasonable and fair positively affects their satisfaction (Karaağaoğlu & Gündüz, 2023). As a result, this satisfaction enhances passengers' attitudes towards LCCs (Chand et al., 2024). On the other hand, if passengers believe that the prices of LCCs are too high, it will reduce their satisfaction, leading to negative attitudes towards LCCs (Du, 2024). Thus, we argue that price indirectly (through passenger satisfaction) affects attitudes toward LCCs (Bagwell & Kellerman, 2023).

H7: Passenger satisfaction “mediates price and attitudes towards LCCs.”

Access of Passenger, Satisfaction, and Attitude towards LCCs

Researchers believe that enhancing passengers' access to LCCs can increase their satisfaction (Erdağ et al., 2024). Passenger access includes “ease of booking, convenient flight schedules, and affordable fares.” All of these factors individually and collectively affect passengers' satisfaction (Karaağaoğlu & Gündüz, 2023). Thus, when passengers experience high access levels, their satisfaction increases (Xue & Ylagan, 2024). As a result, their attitudes towards LCCs increase positively (Bagwell & Kellerman, 2023). On the other hand, limited access reduces passengers' satisfaction levels, leading to negative attitudes toward LCCs (Lin, 2022).

H8: Passenger satisfaction “mediates access of passengers and attitudes toward LCCs.”

Technological Self-Efficacy, Passenger Satisfaction, and Attitude towards LCCs

Technological self-efficacy refers to individuals' ability to use digital technology (Brents Jr et al., 2024). Thus, passengers with high technological self-efficacy would be more satisfied, leading to a positive attitude towards LCCs (Aamir et al., 2023). In contrast, Kim and Cho (2024) assert that passengers with low technological efficacy would be less satisfied, leading to negative attitude towards LCCs (Fuyane, 2021).

H9: Passenger satisfaction “mediates technological self-efficacy and attitude towards LCCs.”

Loyalty, Passenger, and Attitude towards LCCs

Airline passengers with positive experiences with LCCs are loyal to them (Angulo-Cabanillas, 2024). Thus, researchers believe this satisfaction enhances passenger loyalty and increases their attitudes toward LCCs (Pan & Truong, 2021). On the other hand, passengers with low loyalty toward LCCs are often not satisfied (Aamir et al., 2023). As a result, they develop low attitudes toward LCCs (Wungrotjanarut, 2020). Many past studies noted that loyalty, directly and indirectly (through satisfaction), affects attitudes toward LCCs (Kim & Cho, 2024).

H10: Passenger satisfaction “mediates passenger loyalty and attitude towards LCCs.”

Airline Reputation, Passenger Satisfaction, and Attitude towards LCCs

Researchers assert that passengers are satisfied with highly reputed LCCs (Koharudin & Simarmata, 2024). This satisfaction leads to positive attitudes toward LCCs (Karaağaoğlu & Gündüz, 2023). In contrast, passengers are dissatisfied with poorly reputed LCCs (Dike et al., 2024), resulting in negative attitudes toward LCCs (Bagwell & Kellerman, 2023). Many studies noted that loyalty indirectly (through satisfaction) affects attitudes toward LCCs (Maulana et al., 2024).

H11: Passenger satisfaction “mediates airline reputation and attitude towards LCCs.”

Airline Safety Passenger Satisfaction and Attitude towards LCCs

Koharudin and Simarmata (2024) assert that customers are highly satisfied with the LCCs with a reputation for safety (Bagwell & Kellerman, 2023). As a result, this positively affects their attitudes toward LCCs (Erdağ et al., 2024). On the contrary, passengers are unsatisfied with the LCC's poor safety record (Herjanto et al., 2022). This dissatisfaction leads to negative attitudes toward LCCs (Bagwell & Kellerman, 2023). Many studies highlight that LCCs' safety indirectly (through Satisfaction) affects attitudes toward LCCs (Eshaghi et al., 2024).

H12: Passenger satisfaction mediates “airline safety and attitude towards LCCs.”

Methodology

Research Design

If a researcher plans and executes a research design, it will help achieve research objectives and improve the quality of the research. A research design includes types of study, target population, sampling techniques, scales and measures, and statistical analysis (Cooper & Schindler, 2020). This study empirically tested the hypotheses (Sekaran & Bougie, 2020). Moreover, its approach is deductive since we build the hypotheses based on the past literature and empirically test them based on data collected through close-ended questionnaires (Zikmund et al., 2020).

Population and Sample Size

Cooper and Schindler (2020) assert that defining the target population is important. Researchers can focus on a specific group and develop an appropriate sampling technique in a well-defined target population (Creswell, 2019). In addition, it improves generalizability, reduces bias, and enhances accuracy (Saunders et al., 2019). The study's target population is local passengers who traveled locally or internationally in 2021. According to estimates, their size in 2021 was 4.93 million (The Global Economy, 2021). The minimum sample size for this population using Rao Soft comes to 387. However, we intercepted 500 passengers and received 480 questionnaires.

Scale and Measures

Zikmund et al. (2020) assert that scales and measures are important determinants of research. They allow researchers to ensure that the collected data are accurate, reliable, and valid (Sekaran & Bougie, 2020). We measured the respondents' responses on the 5-point Likert Scale. "One shows a low agreement, and five suggest a high agreement." Table 1 summarizes the data related to the adopted questionnaire.

Table 1: Scale and Measures

Constructs	Sources	Internal Consistency in Past Studies	Items
Low-Cost Carrier	Singh and Kapoor (2017)	0.783 to 0.780	5
Price	Özdemir and Şimşek (2017)	0.774 to 0.795	5
Access of Passengers	Singh and Kapoor (2017)	0.766 to 0.832	7
Technological Efficacy	Venkatesh and Davis (2000)	0.770 to 0.801	6
Passenger Loyalty	Chen and Chen (2017)	0.779 to 0.886	7
Airline Reputation	Kim and Lee (2022)	0.713 to 0.856	6
Airline Safety	Bravo and Vieira (2019)	0.786 to 0.832	6
Passenger Satisfaction	Chen & Chen, 2022)	0.801 to 0.888	6

Statistical Analysis

We have used Smart PLS for statistical analysis. Researchers prefer this software to others due to its unique combination and benefits (Radomir & Ringle, 2022). Moreover, Smart PLS can handle large data sets and analyze multiple-group data (Ringle & Sarstedt, 2022). Furthermore, it offers extensive reporting options and facilitates a clear and concise presentation of results (Hair et al., 2022).

Results

Respondent Profile

Table 2 depicts the respondents’ profile in terms of “gender, marital status, age, educational level, and income level.”

Table 2: Demographics

Demographic	Category	Percentage
Gender	Male	57%
	Female	44%
Marital Status	Single	43%
	Married	54%
	Divorced	10%
Age	Up to 20 Years	37%
	21 to 30 Years	33%
	31 to 40 Years	20%
	41 to 50 Years	10%
	51 Plus Years	
Education level	Martic	12%
	Inter	35%
	Diploma	
	Bachelors	45%
	Master	8%
Income	Up to Rs.50,000	7%
	Rs.51,000 to Rs.100,000	18%
	Rs.101,000 to Rs.150,000	39%
	Rs.151,000 to Rs.200,000	19%
	Rs.200,000 Plus	17%

Measurement Model

A measurement model operationalizes the constructs and ensures they accurately capture the underlying concepts (Hair et al., 2022). It also generates results related

to the “reliability and validity of the indicators, individual item loadings, composite reliability, and average variance extracted (AVE)” (Kock, 2022). It lays the foundation for the structural model, leading to a meaningful conclusion (Sarstedt et al., 2022). Figure 2 depicts the measurement model.

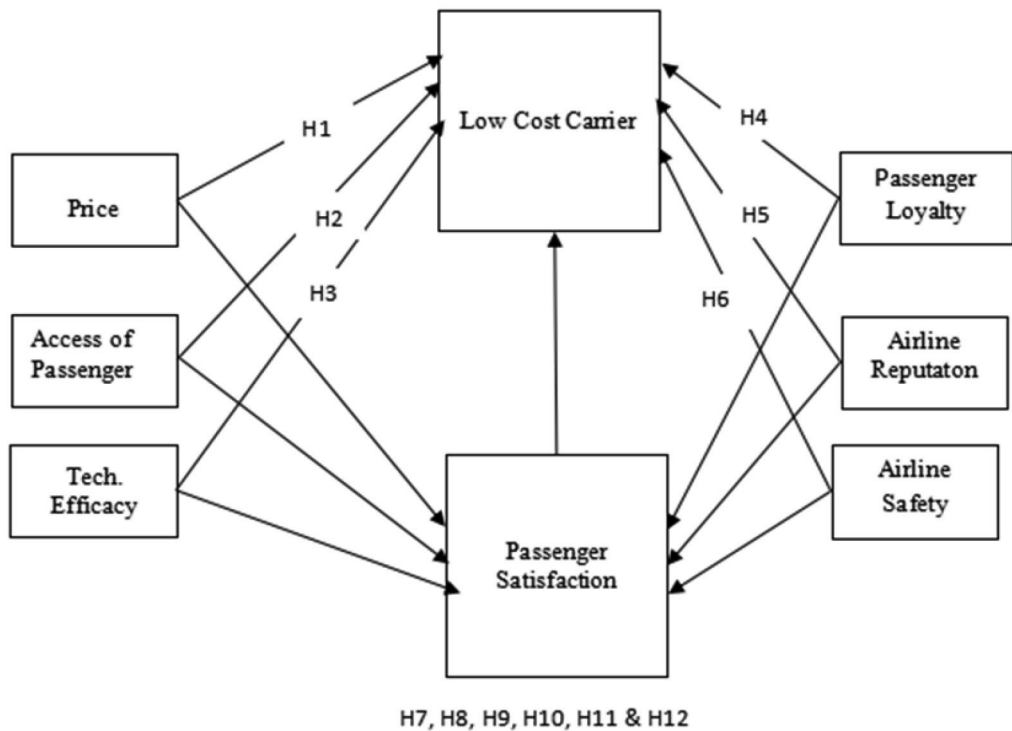


Figure 2: Measurement Model

Convergent Validity

Table 3 shows results related to the convergent validity. It shows loadings of indicator variables, the AVE values and composite reliability of the constructs.

Table3 Construct Reliability

Constructs	Items	Loading	AVE	C. Reliability
Price	PR1	0.913	0.891	0.919
	PR2	0.873		
	PR4	0.881		
	PR5	0.923		
Access to Passenger	AP1	0.772	0.606	0.885
	AP2	0.775		

	AP3	0.799		
	AP4	0.772		
	AP7	0.773		
Technological Efficacy	TE1	0.740	0.585	0.894
	TE2	0.795		
	TE3	0.826		
	TE5	0.724		
	TE6	0.765		
Passenger Loyalty	PL1	0.765	0.606	0.915
	PL2	0.800		
	PL4	0.819		
	PL5	0.739		
	PL6	0.825		
	PL7	0.768		
Airline Reputation	AR1	0.847	0.661	0.921
	AR2	0.800		
	AR3	0.859		
	AR5	0.810		
Airline Safety	ARS1	0.848	0.681	0.895
	ARS3	0.822		
	ARS4	0.849		
	ARS5	0.779		
Passenger Satisfaction	PS2	0.837	0.661	0.907
	PS3	0.782		
	PS4	0.795		
	PS5	0.838		
	PS6	0.811		
Low-Cost Carrier	LCCs.1	0.800	0.741	0.935
	LCCs.2	0.896		
	LCCs,3	0.882		
	LCCs.4	0.882		
	LCCS.5	0.842		

The results show that the factor loading of all indicator variables is at least 0.724 (Cooper & Schindler, 2020). The AVE values cross the threshold levels of 0.500, and the composite reliability values are greater than 0.885. Thus, we inferred “that the constructs fulfill the requirement of convergent validity” (Sekaran & Bougie, 2020).

Discriminant Validity

Assessing the discriminant validity of the constructs is essential (Henseler et al., 2025). Otherwise, it may distort the results (Rönkkö & Cho, 2022). The discriminant validity based on Fornell and Larcker's (1981) Criteria has certain limitations. Therefore, we have assessed it using two methods: (i) Fornell and Larcker's (1981) criteria and (ii) HTMT ratio. Table 4 shows that "AVE square values exceed Pearson Correlation Values." Table 5 shows "that HTMT values are less than 0.850" (Henseler et al., 2025). Thus, the results of both methods "confirm that the constructs are unique and different."

Table 4: Discriminant Validity (Fornell and Larcker, 1981 Criteria)

Constructs	AP	AR	ARS	PR	LCCS	PL	PS	TE
Access to Passengers	0.778							
Airline Reputation	0.739	0.813						
Airline Safety	0.620	0.713	0.825					
Price	0.622	0.597	0.384	0.890				
Low-Cost Carrier	0.705	0.745	0.628	0.575	0.861			
Passenger Loyalty	0.741	0.736	0.741	0.615	0.767	0.779		
Passenger Satisfaction	0.723	0.761	0.615	0.597	0.704	0.784	0.813	
Technological Efficacy	0.727	0.753	0.599	0.629	0.759	0.743	0.735	0.765

Table 5: Discriminant Validity (HTMT Ratio)

Constructs	AP	AR	ARS	PR	LCCS	PL	PS	TE
Access to Passengers	-							
Airline Reputation	0.853							
Airline Safety	0.727	0.813						
Price	0.727	0.673	0.433					
Low-Cost Carrier	0.804	0.903	0.706	0.642				
Passenger Loyalty	0.854	0.927	0.853	0.697	0.845			
Passenger Satisfaction	0.845	0.855	0.698	0.686	0.901	0.880		
Technological Efficacy	0.972	0.852	0.693	0.722	0.853	0.840	0.843	-

R Square Value

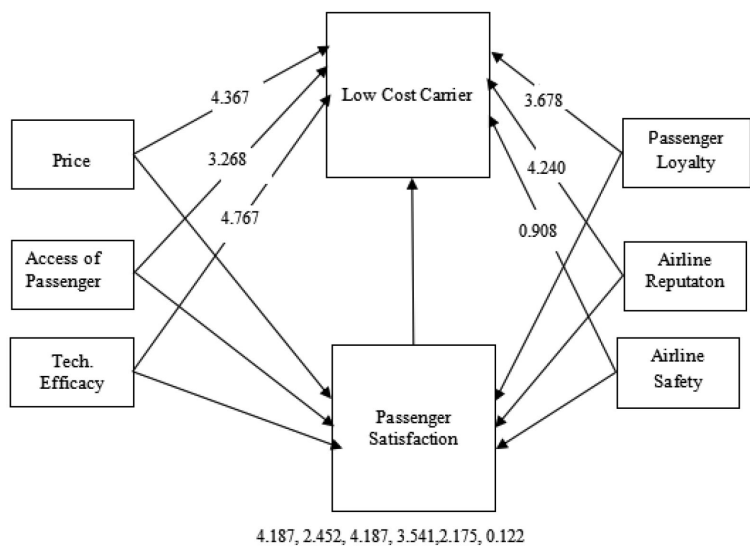
The R² value indicates the predictive power of the Model. Table 6 shows that R square values for low-cost carrier and passenger satisfaction are 0.764 and 0.684, respectively, suggesting good predictive powers (Kock, 2022).

Table 6: R Square Values

Dependent Variables	R-Square	R-Square Adjusted
Low-Cost Carriers	0.768	0.764
PS	0.689	0.684

Structural Model

A well-specified structural model is important as it validates the theoretical framework and identifies key outcomes (Radomir & Ringle, 2022). It also shows t-values and structural relationships (Kock, 2022). Figure 3 depicts the structural model.



Hypothesis Results

Table 7 shows the results of six direct Hypotheses and six mediating Hypotheses. It also shows the hypotheses' beta, t-values, and p-values.

Table 7: Hypotheses Results

Hypothesis	Beta	t-value	p-value	Results
Price -> Low Cost Carriers (H1)	0.214	4.367	0.969	Accepted
Access of Passenger -> Low-Cost Carriers (H2)	0.314	3.268	0.343	Accepted
Tech. Efficacy -> Low-Cost Carriers (H3)	0.215	4.767	0.000	Accepted
P. Loyalty -> Low Cost Carriers (H4)	0.125	3.678	0.661	Accepted
Airline Reputation -> Low Cost Carriers(H5)	0.402	4.240	0.000	Accepted
Airline Safety -> Low-Cost Carriers (H6)	0.008	0.098	0.922	Rejected
Price -> P. Satisfaction -> Low-Cost Carriers (H7)	0.118	3.672	0.098	Accepted
Access of Pas.-> P. Satisfaction -> Low-Cost Carriers (H8)	0.043	2.452	0.014	Accepted

T. Efficacy -> P. Satisfaction -> Low-Cost Carriers (H9)	0.202	4.187	0.001	Accepted
P. Loyalty -> P. Satisfaction -> Low-Cost Carriers (H10)	0.117	3.541	0.000	Accepted
A. Reputation R -> P. Sat. -> Low-Cost Carriers (H11)	0.071	2.175	0.030	Accepted
A. Safety -> P. Sat. -> Low-Cost Carriers (H12)	0.004	0.122	0.903	Rejected

The results support five direct hypotheses (H1, H2, H3, H4, and H5), but they do not support Hypothesis 6. In the context of mediating, we found support for five Hypotheses (H7, H8, H9, H10, H11) but not for Hypothesis 12.

Discussion and Conclusion

Discussion

We “found that price positively affects attitude towards LCCs.” Many studies highlighted that “air travel prices positively affect attitudes toward LCCs” (Nurhidayat et al., 2023). Passengers in developing countries like Pakistan are highly price-sensitive (Du et al., 2024). If an airline's fares change slightly, they will switch to other carriers (Syahailatua et al., 2022). On the contrary, researchers believe that before making buying decisions, passengers compare the prices with the quality of services, amenities, and flexibility. If they feel the price gives them more value for the money, they will buy the ticket irrespective of the price (Karaağaoğlu & Gündüz, 2023).

We “found access of passengers positively affects attitude towards LCCs.” Researchers argue that passengers' attitudes toward carriers profoundly depend on many factors, including “convenient access to airports, transportation options, and booking processes” (Nurhidayat et al., 2023). Moreover, travelers choose LCCs that are easily accessible, as they reduce and save time (Gualini, 2024). Furthermore, travelers are more attracted to an airline whose booking system is user-friendly (Herjanto et al., 2022). Besides the above-discussed facilities, technology and online booking systems positively affect passengers' attitudes toward LCCs (Nurhidayat et al., 2023).

We “found that technological self-efficacy positively affects attitude towards the LCCs.” Technological self-efficacy refers to individuals' ability to use digital technology (Capistrano et al., 2023). Thus, passengers with high technological self-efficacy would have a positive attitude toward LCCs (Chow et al., 2022). Padmaningrum et al. (2024) noted that LCCs can reduce costs by digitally offering online facilities such as booking, check-in, and other travel arrangements (Islam, 2023). However, researchers believe that passengers who are comfortable using technology appreciate these online facilities (Ogegbo et al., 2024). On the other hand, passengers with low technological self-technology prefer personalized services (Nyman et al., 2022). Therefore, their attitudes

toward online facilities would be low (Wachukwu et al., 2023).

We “found passenger loyalty positively affects attitude towards LCCs.” Maulana et al. (2024) noted that consumers with a pleasant experience with LCCs are more loyal to them (Karaağaoğlu & Gündüz, 2023). Moreover, LCCs that offer rewards and frequent flyer benefits increase passengers' loyalty (Erdağ et al., 2024). Furthermore, passengers' perception of belonging to an LCC increased their loyalty (Herjanto et al., 2022). Additionally, passengers' loyalty toward an LC depends on “price, convenience, and service quality.” (Kethüda et al., 2023). These aspects individually and collectively positively affect passenger attitudes towards LCCS.

We “found airline reputation positively affects attitude towards LCCs.” Researchers believe that “reliable and trustworthy” LCCs increase their reputation (Chand et al., 2024). Consequently, passengers develop a positive attitude towards such LCCs (Herjanto et al., 2022). Moreover, researchers assert that passengers develop a positive attitude towards LCCs with a strong reputation for “customer service and overall quality” (Chang & Ku, 2023). In contrast, passengers would have negative attitudes toward LCCs with poor reputations despite offering lower prices than competitors (Kim & Hwang, 2023).

We “found air safety insignificantly affects attitude towards the LCCs.” Many antecedents affect passengers' attitudes toward LCCs. However, studies have noted that airline safety is the most important antecedent (Koharudin & Simarmata, 2024). Moreover, LCCs with a strong safety reputation increase passengers' confidence, leading to positive attitudes toward them (Thongkruer & Wanarat, 2023). On the other hand, safety concerns adversely affect passengers' attitudes toward LCCs, even if they offer lower fares than competitors (Herjanto et al., 2022). Researchers noted that airlines that compromise on safety to reduce costs would promote negative attitudes (Chand et al., 2024).

We “found passenger satisfaction mediates price and attitude towards LCCs.” Koharudin and Simarmata (2024) assert that passengers' perception of the price of LCCs being reasonable and fair positively affects their satisfaction (Karaağaoğlu & Gündüz, 2023). As a result, this satisfaction enhances passengers' attitudes toward LCCs (Chand et al., 2024). On the other hand, if passengers believe that the prices of LCCs are too high, it will reduce their satisfaction, leading to negative attitudes toward LCCs (Du, 2024).

We “found passenger satisfaction mediates access of passengers and attitude towards LCCs.” Researchers believe that enhancing passengers' access to LCCs can increase their satisfaction (Erdağ et al., 2024). Passenger access includes “ease of booking, convenient

flight schedules, and affordable fares.” All of these factors individually and collectively affect passenger satisfaction (Karaağaoğlu & Gündüz, 2023). Thus, when passengers experience high access levels, their satisfaction increases (Xue & Ylagan, 2024). As a result, their attitudes towards LCCs increase positively (Bagwell & Kellerman, 2023). On the other hand, limited access reduces passengers’ satisfaction levels, leading to negative attitudes toward LCCs (Lin, 2022).

We “found passenger satisfaction mediates technological self-efficacy and attitude towards LCCs.” Technological self-efficacy refers to individuals’ ability to use digital technology (Brents Jr et al., 2024). Thus, passengers with high technological self-efficacy would be more satisfied, leading to a positive attitude toward LCCs (Aamir et al., 2023). In contrast, Kim and Cho (2024) assert that passengers with low technological self-efficacy would be less satisfied, leading to negative attitudes towards LCCs (Fuyane, 2021).

We “found passenger satisfaction mediates passenger loyalty and attitude towards LCCs.” Airline passengers with positive experiences with LCCs are loyal to them (Angulo-Cabanillas, 2024). Thus, researchers believe this satisfaction enhances passenger loyalty and increases their attitudes toward LCCs (Pan & Truong, 2021). On the other hand, passengers with low loyalty toward LCCs are often not satisfied (Aamir et al., 2023). As a result, they develop low attitudes toward LCCs (Wungrotjanarut, 2020). Many past studies noted that loyalty, directly and indirectly (through satisfaction), affects attitudes toward LCCs (Kim & Cho, 2024).

We “found passenger satisfaction mediates airline reputation and attitude towards LCCs.” Researchers assert that passengers are satisfied with highly reputed LCCs (Koharudin & Simarmata, 2024). This satisfaction leads to positive attitudes toward LCCs (Karaağaoğlu & Gündüz, 2023). In contrast, passengers are dissatisfied with poorly reputed LCCs (Dike et al., 2024), resulting in negative attitudes toward LCCs (Bagwell & Kellerman, 2023).

We “found passenger satisfaction insignificantly mediates airline safety and attitude towards LCCs.” Koharudin and Simarmata (2024) assert that customers are highly satisfied with LCCs with a reputation for safety (Bagwell & Kellerman, 2023). As a result, this positively affects their attitudes toward LCCs (Erdağ et al., 2024). On the contrary, passengers are unsatisfied with LCCs’ poor safety record (Herjanto et al., 2022). This dissatisfaction leads to a negative attitude toward LCCs (Bagwell & Kellerman, 2023).

Conclusion

Airlines worldwide have launched LCCs to make traveling more affordable for those who cannot afford high travel costs. LCCs also increase airlines' viability, contribute significantly to economic development, and generate employment. This study has proposed and tested six direct and six mediating hypotheses. We collected the data from local Pakistani travelers. We found that "low prices, access of passengers, technological efficacy, passenger loyalty, and airline reputation positively affect attitudes toward LCCs." The study highlighted that airline safety insignificantly affects attitudes toward LCCs. We also "examined the mediating role of passenger satisfaction between the above antecedents and attitudes towards" LCCs. The study accepted all the mediating relationships except Hypothesis 12: "Passenger satisfaction mediates airport safety and attitudes towards LCCs."

Implications

The pricing strategy of low-cost carriers (LCCs) has disrupted the conventional aviation industry's business model (Nurhidayat et al., 2023). LCCs offer significantly lower fares, attracting price-sensitive customers and stimulating demand (Du et al., 2024). The traditional carriers must reduce fares to remain competitive (Syahailatua et al., 2022). The increased access to passengers by LCCs has increased the demand for budget-conscious and leisure travelers (Karaağaoğlu & Gündüz, 2023). As a result, the LCCS market has increased significantly in recent years (Kanrak et al., 2024). The traditional airline has also adopted LCC's business model to remain competitive by offering budget-friendly options and altering route networks to compete (Kaffash & Khezrimotlagh, 2023).

The technological self-efficacy of LCCs has streamlined processes, reduced costs, and increased customer engagement (Capistrano et al., 2023). Traditional carriers must also focus on technological self-efficacy to reduce costs and stay competitive (Chow et al., 2022). By adopting passenger loyalty programs, LCCs have become highly competitive (Ogegbo et al., 2024). Their revenues have increased significantly and achieved long-term sustainability (Nyman et al., 2022). Thus, traditional airlines must also improve their loyalty programs to attract and retain customers (Wachukwu et al., 2023).

In recent years, LCCs have built a strong reputation for reliability and efficiency (Chand et al., 2024). As a result, they receive good reviews from the satisfied customers (Herjanto et al., 2022). Traditional airlines must improve their reputation to remain competitive (Chang & Ku, 2023). Researchers believe a strong safety record reinforces passengers' confidence and increases loyalty (Kim & Hwang, 2023). Thus, while cost-cutting, airlines must not ignore safety protocols, crew training, and aircraft maintenance (Shrago, 2024). Past studies suggest that a single safety incident can tarnish airlines' reputations

and trigger regulatory scrutiny (Lee et al., 2022).

Limitations and Future Research

The study used six antecedents: “prices, access of passengers, technological efficacy, passenger loyalty, airline reputation, and airline safety.” Other studies may incorporate antecedents such as “Low fares, limited amenities, single-class seating, and point-to-point routes in their studies.” We used “passenger satisfaction” as the mediator.” Other studies may use “airline management, crew scheduling, and revenue management as mediators.” We did not use any moderator; other studies may use “operation managers, customers’ services and quality control as moderates.” We focused on local passengers. We advise others to focus on international travelers.

Annexure 1

Constructs and Items Used in the Study

Low-Cost Carriers (LCCs)

- LCCs1. The ticket prices of LCCs are reasonable
- LCCs2. LCCs offer convenient flight schedules
- LCCs3. The check-in process for LCCs is efficient.
- LCCs4. The customer service of LCCs is responsive and helpful.
- LCCs5. The overall experience with LCCs is satisfying

Price

- PR1. The ticket prices of LCCs are affordable.
- PR2. LCCs offer competitive pricing compared to traditional airlines
- PR3. The extra charges for services (e.g., baggage, food) on LCCs are reasonable.
- PR4. I am willing to pay a premium for additional services on LCCs.
- PR5. The price transparency of LCCs is satisfactory.

Access to Passenger

- AP1. LCCs provide easy access to booking and purchasing tickets online.
- AP2. The check-in process for LCCs is convenient and accessible.
- AP3. LCCs offer accessible and affordable transportation to a wide range of destinations.
- AP4. The airport facilities and services provided by LCCs are accessible and convenient.
- AP5. LCCs provide clear and accessible information about their services and policies.
- AP6. LCCs offer accessible and convenient payment options.
- AP7. Overall, I find LCCs accessible and convenient for my travel needs.

Technological Efficacy

- TE1. I am confident that by using technology, I can complete tasks efficiently.
- TE2. I can quickly learn new technologies and adapt to changes.
- TE3. I am effective in using technology to communicate with others.
- TE4. I can troubleshoot technical issues and find solutions.
- TE5. I am comfortable using technology to access and manage information.
- TE6. Overall, I believe I am technologically proficient and effective.

Passenger Loyalty

- PL1. I am likely to choose this airline for my next flight.
- PL2. I am satisfied with the overall service provided by this airline.
- PL3. I feel a strong sense of loyalty to this airline.
- PL4. I will pay a premium to fly with this airline.
- PL5. I recommend this airline to friends and family.
- PL6. I am committed to continuing to use this airline's services.
- PL7. Overall, I am extremely loyal to this airline.

Airline Reputation

- AR1. This airline has a strong reputation for safety.
- AR2. I know his airline for its high-quality service.
- AR3. This airline is reliable and punctual.
- AR4. This airline has a good reputation for handling customer complaints.
- AR5. I perceive this airline as a leader in the industry.
- AR6. Overall, this airline has a positive reputation.
- Airline Safety Bravo and Vieira (2019)
- ARS1. This airline prioritizes safety above all else.
- ARS2. I feel safe when flying with this airline.
- ARS3. This airline has a good safety record.
- ARS4. This airline’s crew is well-trained and prepared for emergencies
- ARS5. The aircraft is well-maintained and in good condition.
- ARS6. Overall, I trust this airline to ensure my safety.

Passenger Satisfaction

- PS1. I am satisfied with the overall service provided by this airline.
- PS2. The check-in process was efficient and convenient.
- PS3. The flight attendants were friendly and attentive.
- PS4. The aircraft was clean and well-maintained.
- PS5. The in-flight entertainment options were satisfactory.
- PS6. Overall, I am satisfied with my travel experience with this airline.

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