

ROLE OF SYSTEM FACTORS AND MARKETING FACTORS TOWARDS CONTINUOUS USE INTENTION OF M-COMMERCE IN KARACHI

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Abstract

This study aims to identify the factors influencing customer satisfaction in the mobile commerce industry of Pakistan, focusing on consumers in Karachi. Utilizing a quantitative research approach, the study collected data from 238 mobile commerce consumers using a non-probability convenience sampling technique. The research employed PLS-SEM to analyze the gathered data. The results revealed that customer satisfaction significantly affects customer loyalty, highlighting its importance for managerial attention. Moreover, trust, social influence, perceived usefulness, perceived ease of use, mobility, and perceived enjoyment were found to have significant effects on customer satisfaction. These findings provide valuable insights for mobile commerce companies in Karachi to enhance their customer satisfaction strategies and improve overall customer experiences, ultimately fostering customer loyalty and sustained business success. By offering exceptional products, services, and support, organizations can ensure positive customer experiences and foster enduring relationships with their clientele in the dynamic and competitive mobile commerce industry of Pakistan.

INTRODUCTION

Background of the study

According to research, with more than 41 million 3G/4G customers, Pakistan has a booming mobile internet user base, making m-commerce platforms easily accessible. In Karachi, Pakistan, m-commerce has been affected by a complex interaction of system elements, marketing plans, and consumer attitudes (Ali et al., 2023). The development of m-commerce has been made possible by the city's expanding technological infrastructure, characterized by the ubiquitous availability of 3G and 4G networks. The popularity of user-friendly mobile applications like Daraz, JazzCash, and Easypaisa has made it possible for customers to easily access a wide range of goods and services (Devulapalli et al., 2023). Currently, the Pakistani e-commerce market was estimated to be worth over \$1 billion,

with mobile devices as the main access point (Khan et al., 2023). Also, secure payment gateways are crucial for increasing consumer confidence in m-commerce platforms. Customers in Karachi require reassurance that transactions will keep their personal and financial information secure. Consumer opinions toward mobile commerce security have been significantly affected by the accessibility of secure payment options and encryption mechanisms (Mustafa et al., 2022).

Additionally, businesses in Karachi use various marketing techniques to draw in and keep m-commerce customers. Consumers are frequently lured in with discounts, promotions, and cashback deals, and localization efforts make sure that the services are compatible with the city's various cultures and preferences. Robust customer assistance systems also promote trust

and improve the user experience (Khan et al., 2023). Customer attitudes about mobile commerce significantly impact these marketing elements, which operate as an intermediary between system factors and customer adoption of this developing technology (Devulapalli et al., 2023). Moreover, customer attitudes are critical to Karachi's continuous intention to use mobile commerce. An outstanding user experience, highlighted by simple navigation and intuitive design, fosters a positive mindset. The sense of security and trust in mobile commerce transactions remains crucial as consumers seek assurances that their personal and financial information is protected (Mustafa et al., 2022).

Furthermore, customers must believe that using mobile commerce platforms is worthwhile. The perceived value plays a significant role in driving customer acceptance and continuous intention to use, whether through cost savings, convenience, or access to a wide range of goods and services. Collectively, these attitudes influence the sustained uptake and usage of m-commerce services in Karachi, Pakistan, by buffering the effects of system and marketing elements (Ali et al., 2023).

Problem statement

Mobile commerce (m-commerce) implementation and its usage in Karachi has its own set of problems due to the following factors. The erratic power supply and the poor and interrupted network connectivity that is characteristic of the city create challenges for the smooth running of the m-commerce platforms leading to failed transactions and influencing users' perceptions negatively (Devulapalli et al., 2023). Furthermore, risks such as identity theft and data breaches demand more spending on cybersecurity to ensure customers' data and gain their trust (Trude et al., 2022). A major challenge is the lack of digital literacy, where 30% of the population stated that they do not use the internet due to their lack of digital skills (Ali et al., 2023). This digital literacy gap reduces users' effectiveness in interacting with m-commerce systems, which affects their subjective evaluation of the system's usability and usefulness.

Furthermore the linguistic richness of Karachi demands multilingualism in m-commerce platforms to ensure that interface is not limited to only Urdu and English languages due to the fact that it may deter some potential users (McLean et al., 2020; Nani & Lina, 2022; Oloveze, Okonkwo, et al., 2022; Tang, 2019). Other factors such as cash culture and limited options for payment solutions also hinder the development of m-commerce. Expanding the payment options to include online banking and mobile wallets will also be crucial due to the local customers' preferences and convenience (Trude et al., 2022).

Moreover, the rivalry in Karachi's m-commerce market might result in price competitions which in turn may affect the quality of services and user experience (Mustafa et al., 2022). Therefore, this study aims to investigate the system factors (ease of use and usefulness) and marketing factors (social influence, accessibility, convenience, and information quality) on user attitude towards m-commerce and their continuous use intention in Karachi. In this regard, this study aims to present recommendations on how the implementation of the factors may improve the usage of m-commerce in the region (Mustafa et al., 2022).

Research gap

Numerous studies have examined the elements that influence users' continuous intention to utilize mobile commerce (m-commerce) platforms (McLean et al., 2020; Nani & Lina, 2022; Oloveze, Okonkwo, et al., 2022; Tang, 2019). But there is still a significant research gap, especially when it comes to Karachi, Pakistan, where consumer attitudes' mediating role hasn't been sufficiently studied and studies that have already been done don't specifically address the variables, theoretical frameworks, and research methods that are relevant to this area (Ali et al., 2023). Even though e-commerce adoption determinants have been extensively studied, especially in Western markets, there aren't many thorough assessments that specifically focus on Karachi, which makes it difficult to gain a deep picture of the local dynamics (Devulapalli et al., 2023).

This study takes a comprehensive approach to close this gap, based on a full theoretical framework that takes into account system characteristics, consumer attitudes, and marketing strategies. Particular attention is given to the mediating role that attitudes play in creating continuous intention. This research is significant not just because of its theoretical foundation but also because of its rigorous methodology. The study intends to provide a nuanced and contextually rich analysis of m-commerce adoption in Karachi by using sophisticated research approaches, such as surveys, interviews, and data analytics. By doing this, it hopes to make a significant contribution to the understanding of the particular elements driving the adoption of m-commerce within the context of a rising economy such as Karachi (Mustafa et al., 2022).

Research objective

The study aims at establishing the system factors (ease of use and usefulness) and marketing factors (social influence, accessibility, convenience and information quality) on continuous intention to use m-commerce in Karachi while consumer attitude toward m-commerce will be intermediate variable. Through focusing on these elements, the study seeks at achieving the following objectives to improve the understanding of m-commerce adoption and usage in the region.

Research questions

What are the system and marketing factors affecting the continuous intention to use m-commerce in Karachi?

Significance of the study

Theoretical significance

With a focus on Karachi, Pakistan, this study has the potential to increase the understanding of the variables impacting the ongoing desire to utilize mobile commerce (m-commerce). This study adds to the body of knowledge in several ways by utilizing well-established theoretical frameworks like the stimulus-organism-response (SOR) model, the theory of reasoned action (TRA), and

the technology acceptance Model (TAM). In order to build a thorough framework for studying m-commerce adoption, this study bridges these theories by combining aspects from SOR (stimulus factors), TRA (attitudes and subjective norms), and TAM (perceived ease of use and perceived usefulness). The understanding of the intricate interplay between cognitive, emotional, and behavioral elements in the context of Karachi is improved by this integration. Additionally, this study establishes these theories in their proper context within a distinct cultural and economic milieu by concentrating on Karachi, Pakistan. It offers insights relevant to similar contexts and aids in identifying how cultural influences may affect consumer attitudes and behaviors in m-commerce.

Moreover, the study sheds light on the factors influencing adoption and continuous use in a fast-changing digital environment by examining customer attitudes and intentions toward m-commerce. This research is a contribution to the larger field of consumer behavior research. In conclusion, the theoretical significance of this study rests in its capacity to expand and improve upon existing theories, offering a framework for comprehending the uptake of m-commerce in Karachi and possibly serving as a template for comparable studies in various cultural and economic situations.

Practical significance

The study's practical application is broad and relevant to numerous stakeholders in Karachi, Pakistan's mobile commerce (m-commerce) ecosystem. The research findings can help companies and marketers create efficient plans to improve their m-commerce products. They may better cater their platforms, promotions, and pricing tactics to the Karachi market by understanding the specific system and marketing aspects that affect customer attitudes and intentions. This will ultimately lead to more user engagement and profitability. Moreover, understanding the factors influencing the adoption of m-commerce might help policymakers. The results of this research can be used to develop laws and policies that support the

expansion of mobile commerce while assuring consumer protection, data privacy, and cybersecurity to regional preferences and concerns.

Additionally, the study can be expanded upon by academics and researchers who want to learn more about the subtleties of m-commerce adoption in various circumstances. It broadens the field's body of knowledge and creates new research opportunities. Also, the study's findings will help businesses enhance their offerings, creating more user-friendly, secure, and value-driven mobile commerce platforms that will benefit Karachi's customers. Overall, the practical significance rests in its capacity to influence legislation, increase academic research, guide strategic decisions, and improve the m-commerce experience for Karachi consumers, all of which would help this essential economic sector flourish sustainably.

Scope of the study

The need to close the significant knowledge gap regarding the variables impacting continuous intention to use mobile commerce (m-commerce) in Karachi, Pakistan's dynamic environment, is the driving force behind this study. While there is an abundance of research on the adoption of e-commerce worldwide, little is known about the particular nuances of Karachi's m-commerce scene, especially with regard to the mediating influence of customer attitudes. The driving force is the realization that the diverse and dynamic market in Karachi demands a focused analysis of the factors influencing m-commerce adoption. The study aims to close this gap and provide useful information for academics, corporations, and governments. In addition, the purpose of using sophisticated approaches, such as surveys and interviews, to offer a deeper perspective drives the study. In the end, this research aims to make a significant contribution to the literature on the adoption of mobile commerce in developing nations by providing useful advice for improving the efficacy of m-commerce strategies in Karachi.

Definition of the variables

Perceived usefulness

PU is defined as an individual's belief that using a particular technology will be helpful (Ruangkanjanases et al., 2021).

Perceived ease of use

PEOU is the degree to which the customer perceives the technology as simple (Ruangkanjanases et al., 2021).

Social influence

SI can be described as an individual's perception of using a new system based on influence or suggestion from the individual (Ruangkanjanases et al., 2021).

Accessibility

Accessibility indicates the degree to which customers may access several channels (Song & Jo, 2023).

Convenience

Convenience is the consumer's perceived degree of avoidance of time and effort in finding and selecting products to purchase (Moeller et al., 2009).

Information quality

IQ refers to the extent to which a system gives valuable and significant information to the user in a timely and accurate manner (Lee et al., 2019).

Attitude

Attitude is an individual's (positive or negative) attitude towards purchasing groceries via mobile application (Anuja & Sharma, 2018).

Continuous intention

CI is described as users' intention to continue using related application services and willingness to pay (Shang & Wu, 2017).

Organization of the thesis

The current thesis has five different chapters that encapsulate the entire research process. The first chapter of the thesis is known as an introduction

that includes a background of the study, which includes a clear understanding of the variables, problem statement and research gaps, research objective, the study's significance, and the study's scope. The second chapter, the literature review, will include theoretical background leading toward hypothesis development. The third chapter, Research Methodology, will include research methods and data analysis techniques. The fourth is data analysis, which will include the research results. The fifth chapter is the conclusion, and recommendations will include the conclusion of the study and policy recommendations as well.

apter No 2

Literature Review

Theoretical underpinnings

Stimulus-organism-response model

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SOR model provides a solid framework for understanding the dynamics of continuous M-commerce usage. The model captures the multidimensional nature of the M-commerce experience by acknowledging that system elements and marketing factors operate as stimuli influencing users' internal processes and attitudes (Cui et al., 2020). Customer attitudes play a mediating function in user perceptions, which in turn influences users' intentions to stick with M-Commerce. This method helps firms develop strategies for greater user pleasure and loyalty by thoroughly understanding the complex interactions between external influences, personal psychology, and prolonged M-Commerce engagement (Yang, 2005).

Theory of reasoned action (TRA)

Martin Fishbein and Icek Ajzen created the Theory of Reasoned Action (TRA) as a psychological framework in the late 1960s (Sadi & Noordin, 2011). By considering two important drivers, attitudes and subjective norms, it seeks to explain and predict human behavior. According to TRA, a person's behavioral intention is influenced by their attitude toward the activity and their sense of what important others anticipate them to do (Lin & Wang, 2006). Subjective norms are societal influences, whereas attitude reflects how a person views the activity. If the person controls their behaviors, TRA assumes these intentions are good indicators of their conduct. To comprehend and forecast behaviors like purchasing decisions and health-related decisions, TRA has been extensively employed in various domains, including marketing, health psychology, and social sciences (Lu, 2014). When applied to M-Commerce, TRA is useful for considering system and marketing aspects and the mediating function of consumer attitudes. Attitudes link accessibility and marketing efficiency, essential for users' continuous M-Commerce involvement. By thoroughly understanding these elements, TRA enables organizations to improve user experiences and sustain platform engagement (Lin & Wang, 2006).

Social influence

Online shoppers' preferences and behaviors are significantly shaped by social influence, which has a major and diverse impact on the digital market. It includes the influence of interpersonal relationships, referrals, and endorsements on customers' choices of products and experiences in general (Oloveze, Ogbonna, et al., 2022). Peer recommendations and reviews are among the main social influences on online shopping. The opinions and experiences of individuals who have purchased similar products are frequently relied upon by customers. Positive reviews and ratings can greatly impact a customer's choice to buy a product or select a supplier.

On the other hand, unfavorable reviews or poor ratings may discourage prospective purchasers. With the help of this type of social influence, customers are directed toward goods and vendors with good reputations (Erjavec & Manfreda, 2022). Social media sites have a significant impact on the way customers shop online. Product recommendations, marketing, and endorsements from friends, influencers, and celebrities are all exposed to consumers. Because consumers value the opinions of those they follow or look up to, these endorsements have much weight. Social media influences Consumers to make purchases through the FOMO (Fear of Missing Out) effect, which makes them believe a product or brand is popular and trendy (Oloveze, Ogbonna, et al., 2022).

Additionally, the sense of community that online shopping may promote is another aspect of the power of social influence. Customers frequently participate in online forums, communities, and groups where they talk about products, exchange stories, and get recommendations from other users. These interactions influence Consumers' decisions, which offer insightful information and suggestions (Erjavec & Manfreda, 2022). Also, online markets have included elements like user-generated content, social sharing buttons, and tailored suggestions based on social relationships due to realizing the value of social influence. By making it simpler for users to share their purchases, recommendations, and experiences with their social networks, these features increase

the impact of social influence (Oloveze, Ogbonna, et al., 2022).

Social influence is a strong and pervasive element in online shopping. The choices and behaviors of customers are influenced by peer recommendations, social media endorsements, and community connections. A key component of the digital purchasing experience, social influence, can be used by online merchants and platforms to foster consumer trust, loyalty, and engagement (Erjavec & Manfreda, 2022).

Accessibility

Accessibility is a key component of online shopping and significantly impacts customer needs and actions in the online market. It includes the simplicity with which customers may use m-commerce systems and engage with them, influencing their general purchasing experiences (Santo & Marques, 2022). Online shopping is primarily associated with accessibility. With an internet connection, consumers can access various goods and services anywhere. This removes geographical restrictions, enabling people to readily obtain a wide range of products in distant areas or regions with few physical shopping options. Due to accessibility, shopping becomes inclusive of people with various origins and locations, which promotes it (Trude et al., 2022). The accessibility of online shopping websites across various devices adds another level of accessibility. Customers may use their cell phones or tablets to shop based on their needs and interests (Santo & Marques, 2022).

Additionally, offering support and customer service helps to increase accessibility. Due to the availability of chat support, email, and toll-free phone lines, online consumers can access assistance anytime they encounter issues or have questions (Oloveze, Ogbonna, et al., 2022). In summary, accessibility is crucial for online purchasing and contributes to its attractiveness and ease of use. Customers are more in control and enjoy better shopping experiences when they can access items from numerous gadgets with simple interfaces and various payment options. Online shopping is gaining popularity and practicality among consumers due to its

widespread accessibility and capacity to satisfy various needs and cultures (Santo & Marques, 2022).

Convenience

Convenience is a key component of online shopping that greatly impacts the way customers behave in the online market. The simplicity that m-commerce platforms offer clients significantly influences how they perceive and interact with online shopping (Santo & Marques, 2022). Online shopping is, without a doubt, the most practical method. Customers can access various goods and services while traveling or from their homes. By removing the need for in-person store visits, lengthy lines, and time-consuming commutes, this accessibility makes shopping convenient and quick (Trude et al., 2022). Online shopping platforms' constant accessibility offers still another level of convenience. The convenience of being able to shop whenever they want—whether it is early in the morning, late at night, or during their lunch break—is valued by consumers. Many customers' fast-paced lifestyles align with this 24/7 accessibility, enabling them to shop whenever suits them (Santo & Marques, 2022). The convenience of online shopping is characterized by efficiency. M-commerce website navigation is made simple by including search tools, filtering options, and shopping suggestions. Transactions are further accelerated by features like saved payment information and one-click purchases, which take less time and effort (Trude et al., 2022).

Additionally, online shopping is convenient for finding products. Consumers get quick access to product information, reviews, comparison shopping, and an easy way to browse and compare products. This abundance of knowledge enables customers to make wise judgments without lengthy studies, thereby boosting convenience (Yang & Babapour, 2023). The methods for delivery and return are extremely convenient. Numerous online merchants provide a variety of shipping choices, such as same-day or next-day delivery.

Furthermore, hassle-free return policies increase convenience by ensuring customers can readily

return items if dissatisfied (Santo & Marques, 2022). Convenience motivates online shopping and greatly affects how users engage with m-commerce platforms. Due to its emphasis on convenience, online shopping is a well-liked option. Its accessibility, 24/7 availability, efficiency, and user-friendly features provide an environment where customers can shop with ease and confidence (Yang & Babapour, 2023).

Information quality

The quality of the information is a critical factor that profoundly influences customers' decisions and general buying habits regarding online shopping. It comprises the accuracy, completeness, and utility of the data offered on m-commerce platforms, significantly impacting how customers feel and act in the online market (Siregar et al., 2023). First and foremost, online shopping platforms' information quality is critical in fostering customer confidence and trust. Customers are more likely to trust a platform and the products offered when they receive accurate and trustworthy product information. They believe they are making wise decisions because of this trust, which is vital to their decision-making (Ruan & Mezei, 2022). The perceived value of shopping online is closely related to the quality of the information available. Customers evaluate a product's worth and suitability based on its descriptions, specs, and customer reviews. High-quality information improves customer perceptions of the value of a product and how well it meets their needs, which impacts purchase decisions and overall satisfaction (Wandoko & Panggati, 2022).

Additionally, customer opinions of risk are highly impacted by the quality of the information. Online customers commonly have concerns about product satisfaction, legitimacy, and quality. By offering thorough explanations, high-quality information allays these worries and aids consumers in reducing the perceived dangers of online purchases. This encourages customers to move forward with their purchases by fostering a sense of security and confidence (Ruan & Mezei, 2022).

Information quality also influences customers' capacity to make knowledgeable and assured decisions. Customers can compare items, weigh their options, and finally make decisions that fit their preferences and expectations thanks to clear and comprehensive product information. Lowering ambiguity and facilitating decision-making gives customers more power (Wandoko & Panggati, 2022). Also, the effects of information quality go beyond particular purchasing choices. It affects customers' general perceptions of online shopping sites, which impacts their loyalty and propensity to make more purchases in the future. Customer satisfaction increases when they receive high-quality information, strengthening their commitment to the platform and trust (Ruan & Mezei, 2022). The foundation of online shopping is information quality, which is essential for influencing customer trust, perceived value, risk management, well-informed decision-making, and general satisfaction. Businesses are more likely to generate favorable attitudes, develop customer loyalty, and succeed in the cutthroat digital market if they prioritize and invest in providing accurate, relevant, and comprehensive information on their m-commerce platforms (Wandoko & Panggati, 2022).

Perceived ease-of-use

Perceived ease of use (PEOU) is a crucial component of the purchasing experience that significantly affects customers' attitudes and behavior in the online market. This theory is founded on the presumption that a particular technology or platform will be easy to use and intuitive, and it has roots in the TRA. PEOU significantly impacts how customers approach and interact with m-commerce platforms in the context of online shopping (Syaharani & Yasa, 2022). The user-friendliness of online shopping platforms is, by far, the main factor influencing how easy-to-use something is judged to be. Customers believe these platforms to be simple and intuitive, reducing the work needed to navigate, do product searches, and complete purchases. Online shopping's hassle-free and frictionless experience greatly improves how

simple it seems (Al-Gasawneh et al., 2022). The PEOU of online shopping is further enhanced by efficiency and time-saving features. Customer cognitive burden is reduced by the user-friendly, streamlined processes, which encompass everything from product discovery to payment. One-click purchases, personalized recommendations, and the availability of features like saved payment information all help to make online shopping easier and more accessible (Oktania & Indarwati, 2022).

Furthermore, the PEOU is increased by the online shopping platforms' constant accessibility. Customers value the ease of shopping whenever they want, from wherever there is an internet connection. This 24/7 accessibility reduces limitations caused by regular store hours, making internet purchasing incredibly convenient and user-friendly (Al-Gasawneh et al., 2022). In conclusion, PEOU is an essential aspect of the online shopping experience, where accessible surroundings, user-friendly interfaces, and effective processes have made digital retail seem approachable and simple. Thanks to this perception of ease of use, online shopping has become a popular and practical option for a wide spectrum of consumers, which is crucial in attracting and keeping customers in the digital marketplace (Oktania & Indarwati, 2022).

Perceived usefulness

The foundation of the online shopping experience is perceived usefulness (PU), which significantly impacts consumers' attitudes and actions in the online market. This idea, which has its roots in the TRA, is based on the conviction that employing a specific platform or technology will increase one's efficacy and productivity. PU has a transformative impact on how customers approach and interact with digital retail in the context of online shopping (Al-Gasawneh et al., 2022). Additionally, convenience is, by far, the most important factor influencing how valuable something is regarded to be while shopping online. Customers view online retail platforms as priceless tools that make purchasing easier. The PU of online shopping has increased dramatically due to

customers' ability to browse, choose, and shop for things at home or on the road. It offers an unrivaled level of convenience by releasing people from the restrictions of conventional store hours and geographic restrictions (Oktania & Indarwati, 2022). Efficiency and time savings further increase the perceived value of online shopping. Online platforms are viewed as a time-efficient way to get desired products because they eliminate the need for in-person store visits and avoid lengthy checkout queues. Customers value how quickly and easily they can identify products, compare prices, and complete transactions online, which increases the usefulness of online shopping (Al-Gasawneh et al., 2022).

Furthermore, the enormous selection of goods and services available through internet purchasing greatly adds to its PU. Customers love the idea of choice, and online platforms satisfy this need by providing a wide range of options. The variety of possibilities at one's disposal, ranging from niche goods to global names, increases PU and makes it possible for customers to find the exact items they are looking for (Oktania & Indarwati, 2022). In conclusion, PU is a key factor in online shopping, where accessibility to information, efficiency, variety, and convenience have made digital retail an essential and highly valued component of customers' lives (Syaharani & Yasa, 2022).

Attitude (ATT)

According to research, a person's positive or negative thoughts about certain conduct are captured by attitude, a psychological term, especially when making purchasing decisions. Regarding consumer behavior, attitude greatly impacts what products people prefer and what they decide to purchase. Customers engage in this cognitive process by carefully weighing a product's advantages and disadvantages, considering price and features. Attitudes are psychological constructs that influence behavior and, most significantly, intention anticipation (Machi et al., 2022). Positivity fosters a strong sense of connection and trust between customers and goods. This favorable attitude among customers must be fostered for each product. To

do this, services must be thoughtfully created to satisfy the requirements and expectations of clients in order to ensure their satisfaction (Tyrväinen & Karjaluo, 2022).

Customers see goods through an attitude perspective, which is a cognitive process. It significantly influences how decisions are made and influences an individual's inclination to purchase. Recognizing that these attitudes evolve through a difficult and careful approach is important. Various factors significantly shape customers' attitudes toward a product as they use it, including its value, the caliber of the services provided, and their entire experience (Boustani et al., 2022). In online shopping, attitudes and customers' thought processes are closely related. Their perspectives are shaped by their personal experiences and the perceived quality of the offered services and ideals. Positive attitudes promote the propensity to continue using a product or service because these attitudes, in turn, impact their intents (Machi et al., 2022). As a result, businesses that want to maintain consumer loyalty must pay close attention to encouraging favorable attitudes. Businesses may influence attitudes and create a symbiotic relationship between customers and products by providing outstanding value, impeccable services, and a seamless online shopping experience. This will ultimately lead to continuous customer engagement and loyalty (Boustani et al., 2022).

Continuance intention

Continuous intention refers to an individual persistent desire and motivation to regularly engage in a particular behavior or activity over an extended period of time. It captures a positive perspective on future deeds, which is important for businesses and service providers (Francioni et al., 2022). The idea of continuity intentions and this continuous intention are strongly related. It starts with a positive outlook, which is frequently connected to how easily a technology or service is considered to be used and how valuable it is. Customers are more likely to adopt a positive outlook when they believe an activity or product to be simple, practical, and advantageous. Their willingness to repeat the relevant action or

purchase is consequently motivated by this upbeat mindset (Shaw et al., 2022).

Additionally, customers' perceptions of the simplicity of using technology and its financial and non-financial advantages are considered in the comprehensive process known as continuous intention. Customers gain a favorable attitude as they become aware of the advantages and benefits of a technology or product. This upbeat outlook inspires them to repeatedly interact with the good or service (Nguyen Thi et al., 2022).

Moreover, continuous intention in online shopping refers to consumers' continuous intention and eagerness to purchase through these channels. M-commerce is becoming increasingly popular, and its ease in nations like Pakistan lures customers. It has become very enticing for customers to order goods from the convenience of their homes without going to a physical store (Francioni et al., 2022). This propensity for online shopping is a cognitive process as well. Consumers carefully consider every step of the shopping process, frequently giving pre-purchase customer feedback much weight. They heavily rely on these reviews while making decisions. Consumers are more inclined to keep buying the product once a decision is made and a good attitude is created, demonstrating the idea of continuous intention in action (Nguyen Thi et al., 2022).

Hypothesis development

Attitude and continuous intention

According to previous research, customer's attitudes (ATT) about food shopping via mobile commerce (m-commerce) play a significant role in determining how continuously they plan to use these platforms. In the m-commerce arena for grocery shopping, a positive attitude plays a crucial role in creating continuous intention and loyalty (Vo, 2023). ATT primarily reflects how satisfied and confident customers are with m-commerce platforms in general. Customers are more likely to continue using mobile commerce for groceries with a positive attitude. A favorable assessment of the platform's dependability, convenience, and value influences a significant

and continuous intention to rely on the platform for grocery shopping needs (Hsieh et al., 2022).

Additionally, ATT is also directly related to confidence and trust. Customers with a positive attitude have confidence in the platform to deliver a seamless and pleasurable shopping experience. They believe that the advantages of m-commerce include time savings, convenience, and access to a large range of goods. Their intention to continually shop for groceries through m-commerce is strengthened by this trust (Chaveesuk et al., 2022).

Furthermore, ATT indicates the perceived value of customers. Customers are more likely to continue utilizing m-commerce platforms when they believe that doing so benefits their grocery shopping habits. A positive attitude supports the idea that mobile commerce is a useful and practical grocery shopping tool, fostering a continuous intention to the system (Hsieh et al., 2022). Also, ATT and loyalty are related. Customers feel loyalty and attachment when they have a favorable attitude about m-commerce. They are more likely to use the platform repeatedly, refer others to it, and avoid competing options. The strong and continuous intention to shop for groceries through m-commerce is influenced by this loyalty. However, the continuous intention of customers to use these platforms is significantly and favorably influenced by their sentiments toward mobile commerce for grocery shopping. A positive attitude implies loyalty, perceived value, and trust, which help customers stick with m-commerce for their grocery shopping needs. To maintain customer engagement and loyalty in the m-commerce sector, businesses should prioritize efforts to foster positive sentiments among customers (Chaveesuk et al., 2022). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping has a positive effect on continuous intention to use m-commerce for grocery shopping.

Perceived ease-of-use and attitude

PEOU reflects how much customers believe utilizing m-commerce platforms for grocery shopping has become simple and user-friendly.

Similarly, PEOU is a significant factor that influences consumers' attitudes (ATT) regarding using m-commerce for grocery shopping in a good way (Chaveesuk et al., 2022). PEOU and m-commerce platform usability are strongly related. Customers' attitudes are greatly impacted by how simple, intuitive, and user-friendly these platforms are. Grocery shopping becomes more appealing and effective with a user-friendly interface because it appears less work. This satisfying user experience helps customers have a more positive attitude toward adopting m-commerce (Hsieh et al., 2022).

Additionally, PEOU is connected to convenience. M-commerce platforms simplify grocery shopping by facilitating simple product access, practical search functions, and quick checkout procedures. Customers' perceptions of these systems' convenience and hassle-free nature improve and encourage a more upbeat attitude (Vo, 2023).

Furthermore, PEOU affects how well-versed customers feel about technology. It positively affects customers' attitudes when they feel confident, they can utilize m-commerce platforms successfully without facing technological difficulties or complexity. The lack of technological barriers influences a more positive attitude toward m-commerce for grocery shopping (Chaveesuk et al., 2022). Similarly, PEOU and technological confidence are related. Consumer attitudes about adoption are positively influenced when they are confident in their ability to use m-commerce platforms to navigate and make purchases. Consumers are more at ease and have more faith in the platform when they feel confident using the technology (Hsieh et al., 2022). Its use greatly and favorably impacts ATT's perception of m-commerce for grocery shopping. Thus, the hypothesis has formed:

PEOU has a positive effect on ATT towards m-commerce for grocery shopping.

Perceived usefulness and attitude

Customer attitudes (ATT) toward using m-commerce for grocery shopping are significantly influenced by perceived usefulness (PU). PU is the percentage of people who believe adopting m-

commerce platforms for grocery shopping will increase their effectiveness and efficiency (Hsieh et al., 2022). The perceived advantages of utilizing mobile commerce for supermarket shopping are directly related to PU. M-commerce greatly impacts consumers' attitudes when they see it as a helpful tool that makes grocery shopping easier. Customers are more inclined to adopt m-commerce, for instance, if they perceive that it is simple to browse products, compare prices, and access discounts or promotions (Chaveesuk et al., 2022).

Additionally, PU is connected to convenience. M-commerce platforms make it easy for customers to shop for groceries at home or on the go. The convenience of making quick, easy purchases whenever customers want raises the perceived value of m-commerce and fosters a more positive attitude (Vo, 2023).

Likewise, Hsieh et al. (2022) indicated that PU is also associated with time-saving advantages. Customers' impression of the utility of m-commerce is increased if they think it can help them save time that they would otherwise spend on traditional supermarket shopping. Their attitude towards adopting m-commerce for grocery shopping is positively impacted by time efficiency. Furthermore, the platform's capacity to deliver pertinent information impacts PU. Platforms for m-commerce that provide comprehensive product information, dietary data, and user reviews are well-liked by customers. Consumers are more likely to use a platform and have a more favorable attitude when they can readily make informed judgments (Vo, 2023).

In conclusion, PU significantly and favorably influences ATT's attitude about m-commerce for grocery shopping. To encourage positive attitudes and boost adoption rates, businesses in the m-commerce sector should emphasize the utility and benefits of their platforms (Chaveesuk et al., 2022). Thus, the hypothesis has formed:

PU has a positive effect on ATT towards m-commerce for grocery shopping.

Social influence and attitude

According to previous research, social influence significantly and favorably impacts customers'

attitudes (ATT) about using m-commerce for grocery shopping. It exemplifies how people are affected by the thoughts, deeds, and suggestions of those in their social networks (Hsieh et al., 2022). Firstly, customer's attitudes regarding using m-commerce for grocery shopping can be greatly influenced by the advice and experiences of friends, family, and acquaintances. Customers are more likely to perceive m-commerce favorably when they receive positive feedback and word-of-mouth recommendations from reliable sources, which fosters a sense of trust and dependability. When individuals in their social networks successfully use m-commerce platforms for grocery shopping, it gives them a sense of security and motivates them to use the technology themselves (Song & Jo, 2023).

Furthermore, it is important to recognize the power of social media and online reviews. Customers can discuss their experiences with m-commerce for grocery shopping on social networking platforms and review websites. Positive testimonials and recommendations from friends, colleagues, or even internet influencers can change attitudes since they are seen as trustworthy and legitimate sources of information (Vo, 2023).

Additionally, Song and Jo (2023) stated that a sense of belonging and social normative conduct can be produced by social influence. It becomes the standard when a sizable portion of one's social network uses m-commerce for grocery shopping. Customers are likelier to follow these norms, resulting in a more favorable attitude toward adopting m-commerce. Likewise, social network sharing of specials and discounts or group shopping can improve how consumers perceive the advantages of m-commerce for grocery shopping. The social component of spending less and taking advantage of group discounts strengthens the favorable attitude of the platform (Vo, 2023). To promote good attitudes and boost adoption rates in the m-commerce industry, businesses should be aware of social media's influence and use it to their advantage in their marketing plans (Song & Jo, 2023). Thus, the hypothesis has formed:

Social influence has a positive effect on ATT towards m-commerce for grocery shopping.

Accessibility and attitude

Accessibility is key in determining consumer attitudes about adopting m-commerce for grocery shopping. Regarding influencing how consumers view and interact with mobile commerce platforms, accessibility is critical (Vo, 2023). In m-commerce, accessibility mostly refers to the platform's usability and accessibility. Customers can access m-commerce apps or websites anytime and from almost anywhere using their mobile devices. Consumers' attitudes about mobile commerce are positively impacted by the ease and accessibility that allow them to seamlessly incorporate grocery shopping into their daily lives (Chaveesuk et al., 2022).

Additionally, convenience and accessibility are tightly related. Customers' overall purchasing experiences are improved when they can easily access m-commerce platforms, identify the products they need, and complete transactions. User-friendly interfaces, clear navigation, and effective search capabilities all help to improve accessibility perceptions improving attitudes toward using mobile commerce for grocery shopping (Vo, 2023).

Accessibility encompasses m-commerce services' reach and scope as well. Customers are more likely to perceive a platform favorably if it offers thorough coverage, reaches a large geographic area, and offers a diversified choice of grocery products. Multiple delivery alternatives, such as home or curbside pickup, improve accessibility and foster a positive attitude (Chaveesuk et al., 2022). Accessibility in terms of available payment choices is also crucial. M-commerce platforms frequently provide safe and practical payment options, like mobile wallets and one-click checkout, to make transactions simple and hassle-free. This ease of use in the payment process has a favorable impact on how customers perceive accessibility and, in turn, how they feel about mobile commerce (Song & Jo, 2023). Since accessibility is a major factor in fostering favorable attitudes and sustaining participation in grocery shopping through mobile commerce,

businesses in the m-commerce sector should give it top priority on their platforms in order to draw in and keep customers (Hsieh et al., 2022). Thus, the hypothesis has formed:

Accessibility has a positive effect on ATT towards m-commerce for grocery shopping.

Convenience and attitude

According to Hsieh et al. (2022), the adoption of m-commerce for grocery shopping is positively influenced by customers' attitudes (ATT), and convenience is a key component. Consumer impressions and willingness to use this way of shopping are significantly influenced by the convenience provided by m-commerce platforms. First off, m-commerce's accessibility and availability are what make it convenient (Song & Jo, 2023). Consumers can buy groceries at anytime and anywhere through their mobile devices. They can easily fit grocery shopping into their hectic schedules because of this accessibility element, which fosters a more favorable perception of m-commerce. Customers are more inclined to adopt a platform if they can easily use it whenever convenient (Vo, 2023). Secondly, convenience includes the simplicity of use and navigation on m-commerce websites or apps. A more pleasant purchasing experience is facilitated by user-friendly design, effective search tools, and intuitive customer interfaces. Customers' perceptions of convenience are improved, and their attitudes toward m-commerce are positively influenced when they can easily identify the products they need and make their purchases with little effort (Song & Jo, 2023).

Additionally, the benefits of time savings are closely related to convenience. M-commerce allows customers to avoid making actual trips to the grocery shop, saving them significant time. The fact that they can get their groceries delivered right to their home or pick them up without waiting a long time has a favorable effect on their attitude (Hsieh et al., 2022). Also, the convenience of using mobile payment methods is the final factor that improves consumer attitude. One-click checkout and other safe and practical payment options, such as mobile wallets, make transactions easier and improve public awareness

of m-commerce (Song & Jo, 2023). However, customer attitudes regarding using mobile commerce for grocery shopping are greatly influenced by convenience. Thus, the hypothesis has formed:

Convenience has a positive effect on ATT towards m-commerce for grocery shopping.

Information quality and attitude

Consumer attitudes (ATT) about adopting m-commerce platforms for grocery shopping are greatly influenced by the quality of the information accessible on these platforms. Information quality describes the precision, applicability, and value of the data sent to customers. Customers are more likely to use mobile commerce platforms for grocery shopping when they believe the information on those platforms is accurate and timely (Chaveesuk et al., 2022). Similarly, information must be accurate and pertinent for consumers to feel confident. Customers are more likely to trust the m-commerce platform when they obtain accurate information on grocery store products, prices, and reviews. For instance, customers are more likely to trust the platform and adopt a good attitude toward it if they can access thorough information about the nutritional content, expiry dates, and customer reviews for a certain product (Foroughi, Yadegaridehkordi, et al., 2023). High-quality information also aids in lowering the dangers and uncertainties related to grocery shopping online. When educated, customers are more likely to view the m-commerce platform as reputable and trustworthy (Chaveesuk et al., 2022).

Additionally, the quality of the information impacts the entire purchase process. A seamless and gratifying customer experience is facilitated by thorough product descriptions, crystal-clear photos, and correct price information. Positive shopping experiences improve customer opinions of mobile commerce for grocery shopping (Foroughi, Yadegaridehkordi, et al., 2023). Furthermore, trustworthy information encourages repeat business. Customers are more inclined to use the site again if they constantly discover credible information. Positive attitudes

are influenced by positive experiences, which build a loop of loyalty and trust between customers and the m-commerce platform (Song & Jo, 2023).

In conclusion, information quality is crucial in determining how consumers feel about using mobile commerce for grocery shopping. Businesses should put their efforts into delivering high-quality information to consumers to foster positive attitudes and promote the continuous usage of m-commerce platforms for grocery shopping (Foroughi, Yadegaridehkordi, et al., 2023). Thus, the hypothesis has formed:

Information quality has a positive effect on ATT towards m-commerce for grocery shopping.

Mediating effect of ATT between perceived ease-of-use and continuous intention

The platform's perceived ease of use in grocery shopping through m-commerce is a key aspect influencing consumers' continuous intention to use it. People are more likely to sustain their intention to rely on m-commerce platforms for food purchasing if they consider them simple to use and navigate (Chaveesuk et al., 2022). The positive attitudes of customers (ATT) toward m-commerce for groceries act as a positive mediator to make this link indirect rather than direct. The influence of perceived ease of use on the decision to continue using these platforms increases when consumers have a good attitude toward adopting mobile commerce for grocery shopping (Hsieh et al., 2022). Customers are more likely to value and take advantage of the convenience of user-friendly interfaces when they have a positive opinion of m-commerce for groceries. This further strengthens their resolve to eventually shop for groceries through mobile commerce (Vo, 2023). Therefore, companies in this industry should actively nurture positive attitudes among consumers and enhance their applications' and websites' ease of use to ensure long-term engagement and loyalty in m-commerce (Chaveesuk et al., 2022). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of perceived ease-of-use on

continuous intention to use m-commerce for grocery shopping.

Mediating effect of ATT between perceived usefulness and continuous intention

According to research, customers' sentiments toward the platform in the context of m-commerce for grocery shopping play a significant role in determining how likely they are to continue using it. When m-commerce perceived usefulness acts as a mediating factor, this influence becomes especially substantial (Chaveesuk et al., 2022). The degree to which people think utilizing m-commerce for purchasing groceries would increase their effectiveness and efficiency is known as perceived usefulness. Customers' intentions to use mobile commerce are favorably impacted when they believe it is useful (Hsieh et al., 2022). However, this relationship is strengthened even more when they have a favorable view toward m-commerce. The effect of perceived usefulness on the continuous intention to use mobile commerce for grocery shopping is amplified by a positive attitude (Vo, 2023). A positive attitude reinforces the idea that mobile commerce is a useful and practical tool for consumers' grocery needs and reflects consumers' overall satisfaction and trust in the platform. To ensure long-term engagement and loyalty in the m-commerce space, firms should actively foster positive attitudes among consumers and focus on improving their platforms' perceived usefulness (Hsieh et al., 2022). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of perceived usefulness on continuous intention to use m-commerce for grocery shopping.

Mediating effect of ATT between social influence and continuous intention

Consumer attitudes (ATT) regarding the platform are crucial in determining their continuous intention to use it in m-commerce for grocery shopping. When social influence acts as a mediator, this influence becomes especially substantial. The term social influence describes how much people's decisions to embrace and use

technology are influenced by the thoughts and actions of those in their social network (Vo, 2023). Consumers' intentions to continue using m-commerce for grocery shopping are positively impacted when they believe their peers or social contacts actively engage in it. However, when their sentiments toward m-commerce are likewise favorable, this influence is further amplified (Shaw et al., 2022). The effect of social influence on the continuous intention to use mobile commerce for grocery shopping is amplified by a good attitude toward mobile commerce. A positive attitude reinforces the idea that mobile commerce is a useful and practical tool for grocery shopping, especially when people in their social circle use it. It also represents consumers' overall satisfaction and trust in the platform (Song & Jo, 2023). As a result, companies should encourage social impact and cultivate positive attitudes to guarantee long-term engagement and loyalty in the m-commerce space for grocery shopping (Chaveesuk et al., 2022). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of social influence on continuous intention to use m-commerce for grocery shopping.

Mediating effect of ATT between accessibility and continuous intention

Customers' attitudes (ATT) towards the platform are key in determining their continuous intention to use m-commerce for grocery shopping. When accessibility plays a role in mediating this influence, its importance increases. The term accessibility describes how easily customers use the m-commerce platform to purchase groceries (Hsieh et al., 2022). Customers' intentions to use the mobile commerce platform are favorably impacted when they believe it to be highly accessible, which means it is simple to use and always available when needed. However, when they also have favorable sentiments about m-commerce, this association is increased even further (Vo, 2023). The influence of accessibility on the continuous intention to use mobile commerce for grocery shopping is amplified by a good attitude. A

positive attitude confirms consumers' opinion that mobile commerce is a dependable and convenient tool for grocery buying, especially when it is widely accessible. It represents their general happiness and trust in the platform (Francioni et al., 2022). Because of this, companies should prioritize making their m-commerce platforms more accessible while fostering positive sentiments among customers to ensure long-term engagement and loyalty in the m-commerce arena for grocery shopping (Song & Jo, 2023). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of accessibility on continuous intention to use m-commerce for grocery shopping.

Mediating effect of ATT between convenience and continuous intention

According to research, the ease and adaptability consumers can use m-commerce systems for grocery shopping are considered a convenience. Similarly, consumer attitudes (ATT) regarding the platform are crucial in determining their continuous intention to use it in m-commerce for grocery shopping. When convenience plays a mediating component, this influence assumes special significance (Hsieh et al., 2022). Consumers' intentions to use mobile commerce are favorably impacted when they believe it to be very convenient and that it makes grocery shopping quick and easy. However, this association increases more significantly with favorable m-commerce sentiments (Song & Jo, 2023). The influence of convenience on the continuous intention to utilize mobile commerce for grocery shopping is amplified by a good opinion about it. A positive attitude demonstrates customers' general satisfaction and trust in the platform, reinforcing that mobile commerce is a practical and useful tool for grocery shopping, especially when combined with a flawless user experience (Hsieh et al., 2022). As a result, companies should prioritize making their mobile commerce platforms more convenient while fostering a good attitude among customers. This dual strategy guarantees continued engagement and loyalty in the mobile grocery

buying market (Song & Jo, 2023). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of convenience on continuous intention to use m-commerce for grocery shopping.

Mediating effect of ATT between information quality and continuous intention

Regarding m-commerce for grocery shopping, consumer attitudes (ATT) toward the platform are crucial in determining how likely they are to continue using it. When information quality plays a role in mediating this influence, its importance increases significantly. The correctness, usefulness, and dependability of the information offered through the mobile commerce platform for grocery shopping are information quality (Song & Jo, 2023). Customers are more likely to use m-commerce platforms in the future when they believe the information they receive is of excellent quality. However, this association increased greatly when they had favorable sentiments toward m-

commerce (Chaveesuk et al., 2022). A favorable mindset toward mobile commerce is a reinforcing factor, boosting the impact of high-quality information on consumers' continuous intention to use mobile commerce for grocery shopping. A positive attitude reinforces that m-commerce offers trustworthy and important information for grocery shopping, contributing to a happy shopping experience. It also represents consumers' general sense of fulfillment with and trust in the platform (Foroughi, Yadegaridehkordi, et al., 2023). As a result, companies should prioritize providing accurate and pertinent information through their mobile commerce platforms while also working to foster positive sentiments among customers. The continuous engagement and loyalty in the m-commerce industry for grocery shopping is ensured by this united effort (Chaveesuk et al., 2022). Thus, the hypothesis has formed:

ATT towards m-commerce for grocery shopping positively mediates the effect of information quality on continuous intention to use m-commerce for grocery shopping.

Research model

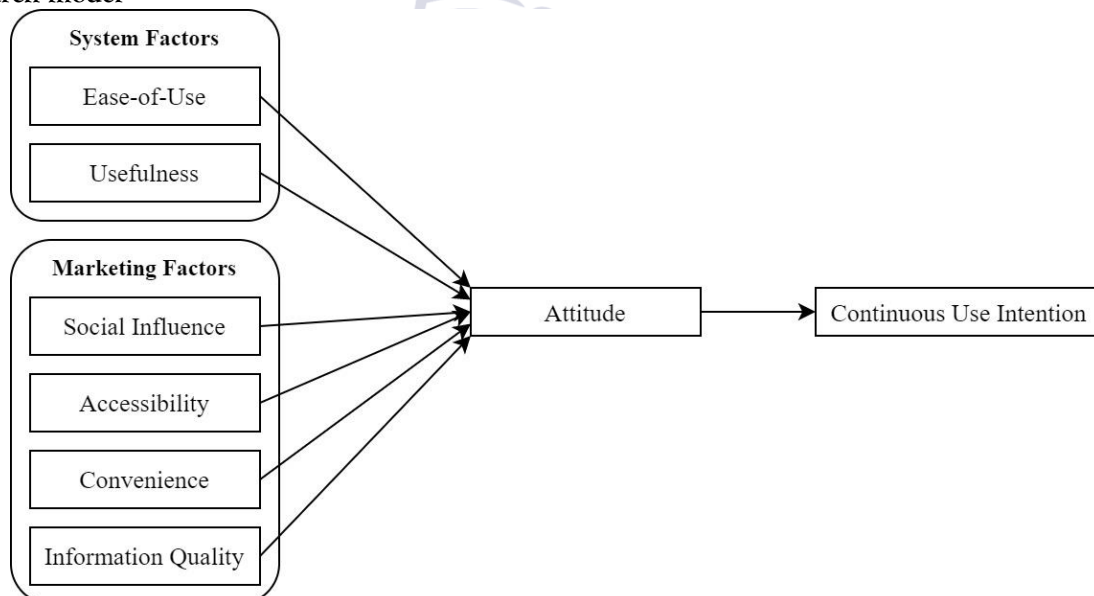


Figure 2.1: Research Model

Chapter No 3**Methodology****Research philosophy**

Positivism is a research philosophy that asserts the existence of an objective reality that can be observed, measured, and understood through systematic, empirical investigation. This philosophy is rooted in the belief that underlying laws or principles govern the natural and social worlds. These rules can be discovered through rigorous scientific methods. Positivism emphasizes the importance of objectivity, verifiability, and replicability in research (Alharahsheh & Pius, 2020).

The choice of positivism in this study on the continuous use intention of M-Commerce in Karachi is influenced by some reasons. Firstly, positivism aligns well with the nature of the research topic, which involves examining factors that can be objectively measured and analyzed. Positive approaches may be used to efficiently study a variety of quantitative variables in the context of M-Commerce, such as user perceptions, attitudes, and behavioral intents (Park et al., 2020).

Besides, adopting a positivist approach makes it easy for a systematic and structured investigation. This is especially necessary when studying complex phenomena like consumer behavior in mobile commerce. By relying on empirical evidence and statistical analysis, positivism provides a solid foundation for drawing objective conclusions. This also allows to make generalizable claims about the factors influencing continuous use intention (Alharahsheh & Pius, 2020).

Research design**Research approach**

The deductive research strategy has as its foundation a well-defined hypothesis or theory. It is a methodological framework that is organized and that carefully collects and examines data in order to test, validate, and refute it. This process creates precise, falsifiable hypotheses that can be tested using already-established theories (Pearse, 2019).

A deductive research approach, in alignment with the positivist philosophy, is suitable for this study on the continuous use intention of M-Commerce in Karachi. By employing deductive reasoning, this study begins with well-defined hypotheses. The hypothesis is related to the influence of various factors on continuous use intention (Okoli, 2023). This structured approach allows for a systematic investigation. This ensures that data collection and analysis are focused on testing these hypotheses. Additionally, it makes it possible for academics to get at trustworthy, unambiguous findings supported by actual data. This is especially significant in research when accuracy and rigor are crucial for reliable results (Young et al., 2020).

Research choice

Quantitative research is an approach to empirical inquiry that focuses on the collection and analysis of numerical data in order to interpret, describe, or predict events. The quantification of inter-variable interactions, objective measurement, and statistical analysis are heavily stressed. This approach has remained highly helpful for studying large populations or groups to draw generalizable conclusions (Bauer et al., 2021).

Quantitative approaches provide an organized way to gather and analyze this data with a high level of accuracy in the context of M-Commerce. Hence, numerical indicators like user satisfaction ratings and likelihood of continuing use are essential in quantitative approaches. A quantitative approach also enables the use of statistical methods to arrive at results that are trustworthy and statistically significant. This guarantees that strong empirical data support the conclusions and are not just anecdotal (Mehrad & Zangeneh, 2019). The validity and reliability of the study's findings are increased by using statistical analysis, which makes it possible to identify trends, correlations, and probable causal linkages between the system, marketing elements, and customer attitudes. Additionally, quantitative research offers a way to get information from a bigger sample size in the field of M-Commerce, where technology improvements and consumer

behaviors are quickly altering. The study's external validity is increased by the researchers' ability to generalize findings to a larger population due to this greater range of data (Bauer et al., 2021).

Research type

Understanding the causal connections between variables is the objective of the explanatory study. By figuring out the fundamental causes and mechanisms that affect them, it aims to explain why certain events happen. Discovering the causes or explanations for observed associations is of special interest to this inquiry (Mitchell, 1967). For this study on the continuing use intention of M-Commerce in Karachi, choosing an explanatory research type with a quantitative technique was wise. An explanatory study looks more closely at how different variables are related. This method is useful for identifying the elements that impact customer attitudes and their desire to continue using mobile commerce platforms in M-Commerce (Bowen et al., 2017). Moreover, an explanatory quantitative approach allows for the control of potential confounding variables. This control, in return, enhances the internal validity of the study. This ensures that any observed effects are attributable to the specific factors under investigation rather than unnecessary influences. Using this method, researchers can clarify the fundamental mechanisms influencing continuous use intention, giving marketers and companies useful knowledge in the rapidly changing world of mobile commerce (Mitchell, 1967).

Time horizon

Cross-sectional research is a snapshot-like time horizon, capturing data from a specific point in time. This method offers a thorough understanding of a population, a phenomenon, or a circumstance at a specific time. The decision to employ a cross-sectional temporal horizon in this study on the desire to use M-Commerce continuously in Karachi was intentional (Setia, 2016).

As per the dynamic nature of technology adoption and consumer behavior, a cross-

sectional design helps collect timely and relevant data. It provides a current picture of Karachi customers' views and behaviors regarding M-Commerce. This is essential for knowing the current environment and developing well-informed judgments based on current knowledge. A cross-sectional temporal horizon also makes it easier to allocate resources effectively. It is a practical solution, particularly if resources or time are limited, as it needs a comparatively shorter data-collecting period than longitudinal investigations. This enables a targeted and economical strategy to obtain insightful data about the ongoing intention of M-Commerce in Karachi (Olsen & St George, 2004).

Sampling design

Sample population

It is crucial to choose mobile commerce users from Karachi for this investigation. Karachi, Pakistan's largest and most diverse city, is a microcosm of consumer behavior changes there (Mazhar et al., 2015). With a population of more than 14 million, Karachi is a large market for several industries, including retail, services, and consumer goods. With about 20% of Pakistan's total economic output, Karachi significantly contributes to the country's GDP. Its many socioeconomic and demographic groups provide a wide-ranging and representative sample for studying consumer behavior (Atiq & Rafiq, 2010; Saleem, 2023).

Karachi also serves as a focal point for cultural variety, representing Pakistan's multiethnic community. Choosing customers from Karachi allows for observing various consumer behavior patterns in a vibrant, economically vital, and culturally varied Pakistani metropolitan center. With an emphasis on cultural moderation, this choice offers a representative sample for investigating the factors influencing continuous intention to use M-Commerce (Shah et al., 2022).

Sample size

Figure 3.1 shows the sample size estimation using an online calculator (Soper, 2023). Figure 3.1

showed that a minimum of 177 responses are required for the study, with an anticipated moderate effect size of 30 percent and a desired statistical power of 80 percent. The instrument

has seven latent constructs and 39 observed variables. Therefore, the study has collected 238 responses from the sample population.

Anticipated effect size:

0.30

?

Desired statistical power level:

0.80

?

Number of latent variables:

8

?

Number of observed variables:

39

?

Probability level:

0.05

?

Calculate!

Minimum sample size to detect effect:

177

Minimum sample size for model structure:

95

Recommended minimum sample size:

177

Figure 3.1: Sample Size Determination

Sampling technique

Participants are chosen for convenience sampling, a non-probability sampling strategy, depending on their ease of availability and accessibility to the researcher. Convenience sampling was employed for this investigation for practical reasons. Given Karachi's diversity and dynamic nature, reaching a diverse cross-section of consumers can be difficult. Using convenience sampling, researchers can effectively collect data from people who are conveniently available and willing to participate (Stratton, 2021).

[illegible]

2021)(Stratton, 2021)(Stratton, 2021)(Stratton, 2021)(Stratton, 2021)(Stratton, 2021) is very helpful in metropolitan areas like Karachi, where people lead busy lives and may not have much time to participate in research studies. This strategy considers their busy schedules and increases their likelihood of engaging. This approach also fits the study's resource limitations and schedule constraints. It makes it possible to collect data in the allotted amount of time in a controlled and practical manner (Burke et al., 2020).

Convenience sampling has the potential to introduce some bias, but the study is aware of this drawback and works to reduce it by making sure the sample is diverse. The study seeks to increase the sample's representativeness by including individuals from various demographic

and socioeconomic backgrounds. Therefore, convenience sampling was selected due to its usefulness and effectiveness in reaching various Karachi mobile commerce consumers (Stratton, 2021).

Unit of analysis

The precise item or degree of observation in a research study is called the unit of analysis. Individual consumers in Karachi serve as the study's analytical unit. This decision is crucial because it enables us to determine the system and marketing factors affecting continuous intention to use m-commerce with the mediating role of consumer attitude towards m-commerce in Karachi. The research can identify subtle changes in consumer behavior, preferences, and attitudes since it is individual-focused. Understanding the precise variables that affect continuous use intentions in a heterogeneous society like Karachi requires this degree of precision (Kumar, 2018). Additionally, studying individuals as the unit of analysis provides the opportunity to aggregate data and draw meaningful conclusions at the group or population level. This makes it possible to apply the findings to a larger group of M-Commerce customers in Karachi. Additionally, it makes it easier to spot prevalent patterns and trends in customer behavior, which may be helpful for marketers and companies looking to improve their tactics (Roczniewska et al., 2022).

Data collection procedure

A five-point Likert scale questionnaire is a survey technique that assesses the degree of agreement or disagreement with statements or questions

using a range of five response possibilities. This data collection method was chosen for this study because it is effective and valuable. Using the structured Likert scale framework, participants can uniformly express their opinions or attitudes (Paradis et al., 2016). This makes it easier to evaluate and assess responses from different people. The Likert scale is also a tried-and-true method frequently used in social science research. It has been confirmed and demonstrated to be dependable for measuring a range of constructs, making it a suitable choice for this investigation (Taherdoost, 2019).

The survey procedure involves asking a sample of people standardized questions. Questions are often given in printed or digital form. As this method is very efficient and useful in gathering data from a wide range of consumers in Karachi, this method is selected for this study. A sizable number of participants' responses can be systematically gathered through surveys. This is especially significant when studying consumer behavior because in-depth analysis requires the perspectives of many different people (Paradis et al., 2016).

Furthermore, surveys are a good way to record individual opinions, attitudes, and preferences, which are important for comprehending customer behavior. Participants can express their ideas using this strategy consistently and quantitatively. The survey approach also fits the study's resource limitations and timing constraints. It makes it possible to collect data in the allotted amount of time in a controlled and practical manner (Taherdoost, 2021).

Data collection instrument

Table 3.1 shows the measurement of the data collection instrument.

Table 3.1: Measures and Instrumentation			
Variable Name	N Items	Likert Type	Source(s)
Perceived Ease of Use	1	5-Point	(Anuja & Sharma, 2018)
	4	5-Point	(Ruangkanjanases et al., 2021)
Perceived Usefulness	5	5-Point	(Ruangkanjanases et al., 2021)
Social Influence	4	5-Point	(Ruangkanjanases et al., 2021)
	1	5-Point	(Lee et al., 2019)
Accessibility	4	5-Point	(Song & Jo, 2023)

Convenience	5	5-Point	(Jiang et al., 2013)
Information Quality	4	5-Point	(Gao et al., 2015)
	1	5-Point	(Lee et al., 2019)
Attitude	5	5-Point	(Kim, 2021)
Continuous Intention	3	5-Point	(Song & Jo, 2023)
	2	5-Point	(Gao et al., 2015)

Data analysis technique

Partial Least Squares Structural Equation Modelling is referred to as PLS-SEM. This statistical method is employed in research models to analyze intricate interactions between variables. Partial Least Squares Structural Equation Modeling (PLS-SEM) is an apt choice for this study on the continuous use intention of M-Commerce in Karachi for several compelling reasons. Firstly, PLS-SEM is highly suitable for research with smaller sample sizes (Hair Jr et al., 2017). Unlike traditional SEM methods, PLS-SEM is robust even when sample sizes are relatively modest. This is particularly advantageous in cases where it is challenging to gather many participants. For example, in niche markets or specialized contexts (Hair et al., 2019). Furthermore, PLS-SEM is capable of handling studies that concentrate on quantitative processes. It is an excellent choice for this study since it examines the interaction of numerous system and marketing elements on customer attitudes and behavior and excels at modeling complicated interactions between many variables. PLS-SEM is a useful tool for going through the complexities of the research framework because of its adaptability and capacity to handle a wide range of variables and frameworks (Hair Jr et al., 2017).

Additionally, PLS-SEM excels at managing models with latent components, measurement flaws, and numerous indicators. This is in complete accordance with the theoretical underpinnings of this research, which draw on well-known models, including the SOR model, Theory of Reasoned Action, and Technology Acceptance Model. Researchers may efficiently capture the underlying constructs and their interactions by utilizing PLS-SEM. This allows a thorough and in-depth examination of the

variables impacting continuous usage intention in M-Commerce (Memon et al., 2021).

Ethical considerations

A number of key ethical factors were carefully considered when performing this study survey. First, participants received in-depth descriptions of the study's goals and purpose. Transparency was maintained, and people had access to all the information required to decide how active they wanted. It was also made clear that taking the survey was optional. Confidentiality was upheld at all costs. No information that may be used to identify a specific person was collected; all responses were anonymized (Gregg et al., 2022). This precautionary measure was implemented to protect participant confidentiality and identification and boost their trust in the study's methodology.

Additionally, any potential harm or discomfort to respondents was carefully avoided when developing survey questions. Each question was written with simplicity, non-intrusion, and clarity in mind. Furthermore, measures were taken to prevent lying in any form. Participants were given precise and genuine information regarding the study's goals to avoid manipulation or incorrect information. Data security was also strictly monitored to prevent hacks and unauthorized access (Gungaphul & Boolaky, 2021).

Chapter No 4

Results and Discussions.

Pilot study

A pilot study is an experimental study aimed to complete the pre-testing of a study's research instrument (Al-Kaseasbeh et al., 2019). Table 4.1 shows the results of a pilot study that used 50 initial responses.

Table 4.1: <i>Pilot Study (n = 50)</i>		
Variable Name	N Items	Cronbach's Alpha
Accessibility	4	0.861
Attitude	5	0.818
Continuous Intention	5	0.809
Convenience	5	0.867
Information Quality	5	0.888
Perceived Ease of Use	5	0.853
Perceived Usefulness	5	0.893
Social Influence	5	0.890

In the above table, all variables have a higher alpha coefficient than the suggested threshold value of 0.80, indicating that the data collection instrument has attained high internal consistency (Hair et al., 2018).

Data screening

Missing values

There has been none missing value in the collected data of 241 responses using frequency statistics (Beale & Little, 1975).

Univariate outliers

No univariate outlier found in 241 responses based on standardized value (ZScore) exceeding ± 3.29 (Smiti, 2020).

Multivariate outliers

3 multivariate outliers have been detected and removed from 241 responses based on Mahalanobis Distance (D^2) < 0.001 (Filzmoser, 2004) reducing final sample to 238 responses.

Demographic profile

Table 4.2 provides the respondent's demographic profile.

Table 4.2: <i>Demographic Profile (n = 238)</i>			
		Frequency	Percent
Gender	Male	128	53.8
	Female	110	46.2
Age Group	18-23 years	38	16
	24-28 years	54	22.7
	29-33 years	39	16.4
	34-38 years	62	26.1
	Above 38 years	45	18.9
Education	Undergraduate	87	36.6
	Graduate	76	31.9

	Postgraduate	75	31.5
Occupation	Student	69	29
	Employed	57	23.9
	Self-employed	66	27.7
	Others	46	19.3
Shopping platform	Daraz. PK	55	23.1
	Home shopping. PK	34	14.3
	Imtiaz Store	40	16.8
	Chase Supermart	38	16
	Krave Mart	36	15.1
	Others	35	14.7
Mobile shopping experience	< 1 year	42	17.6
	1-2 years	56	23.5
	2-3 years	49	20.6
	3-4 years	39	16.4
	> 4 years	52	21.8
Online shopping frequency	Everyday	75	31.5
	Once a week	53	22.3
	A few times a week	55	23.1
	Once a month	55	23.1

The above table shows that the study collected data from 238 respondents. Of those, 128 (53.8%) were male, and 110 (46.2 %) were female. Moreover, 38 (16%) were between the ages of 18-23; 54 (22.7%) were between the ages of 24-28; 39 (16.4%) were between the ages of 29-33; 62 (26.1 %) were between the ages of 34-38; and 45 (18.9%) were above the age of 48. Moreover, 87 (36.6%) participants were undergraduate, 76 (31.9%) were graduate, and 75 (31.5%) were postgraduate. Similarly, 69 (29%) participants were students, 57 (23.9%) were employed, 66 (27.7%) were self-employed, and 46 (19.3%) participants were others. Furthermore, 55 (23.1%) respondents chose Daraz.PK, whereas 34 (14.3 %) chose Homeshopping.PK: 40 (16.8%) chose the Imtiaz store, 38 (16%) chose Chase

supermarket, 36 (15.1%) chose Krave Mart, and 35 (14.7%) chose another shopping platform. Additionally, 42 (17.6%) respondents have less than 1 year of mobile shopping experience; 56 (23.5%) respondents have 1-2 years' experience; 49 (20.6%) respondents have 2-3 years' experience; 39 (16.4 %) respondents have 3-4 years' experience and 52 (21.8%) respondents have more than 4 years' experience. Likewise, 75 (31.5%) respondents shop every day, 53 (22.3%) respondents shop once a week, 55 (23.1%) respondents shop a few times a week, and 55 (23.1%) respondents shop once a month.

Measurement model

The measurement model shows the relationship between latent variables and their measures (Hair, Hollingsworth, et al., 2017). Table 4.3

shows the indicator loadings for construct validity, their significance level, VIF, Cronbach's alpha, composite reliability (CR) for internal

consistency and average variance extracted (AVE) for degree of convergence.

Table 4.3: Measurement Model						
	Loadings	Prob.	VIF	Alpha	CR	AVE
AC1 < AC	0.769	0.000	1.890	0.813	0.877	0.642
AC2 < AC	0.885	0.000	2.493			
AC3 < AC	0.788	0.000	1.701			
AC4 < AC	0.757	0.000	1.480			
ATT1 < ATT	0.808	0.000	1.783	0.846	0.896	0.684
ATT2 < ATT	0.863	0.000	2.137			
ATT4 < ATT	0.823	0.000	1.948			
ATT5 < ATT	0.812	0.000	1.781			
CI1 < CI	0.836	0.000	1.631	0.795	0.880	0.709
CI4 < CI	0.868	0.000	1.856			
CI5 < CI	0.822	0.000	1.643			
CO1 < CO	0.897	0.000	2.544	0.809	0.884	0.717
CO2 < CO	0.789	0.000	2.069			
CO3 < CO	0.852	0.000	1.540			
IQ1 < IQ	0.800	0.000	2.146	0.855	0.902	0.696
IQ2 < IQ	0.851	0.000	2.336			
IQ4 < IQ	0.886	0.000	2.464			
IQ5 < IQ	0.798	0.000	1.861			
PEU2 < PEU	0.887	0.000	2.430	0.870	0.920	0.793
PEU3 < PEU	0.894	0.000	2.257			
PEU4 < PEU	0.890	0.000	2.224			
PU1 < PU	0.809	0.000	2.662	0.890	0.918	0.693
PU2 < PU	0.835	0.000	2.466			
PU3 < PU	0.846	0.000	2.517			
PU4 < PU	0.868	0.000	2.517			
PU5 < PU	0.801	0.000	1.911			
SI1 < SI	0.865	0.000	2.335	0.871	0.911	0.720
SI2 < SI	0.902	0.000	2.960			
SI3 < SI	0.822	0.000	1.954			
SI5 < SI	0.803	0.000	1.918			

Hair, Hult, et al. (2017) suggested that outer loadings must be greater than 0.70 for substantial

indicator reliability, while alpha and CR coefficients must be greater than 0.70 and 0.80,

respectively, for acceptable internal consistency (Hair et al., 2012). Also, AVE should be higher than 0.50 for an acceptable degree of convergence (Hair et al., 2019).

The above table has shown that all indicators have loadings greater than 0.70 and probability levels less than 0.05, showing acceptable

construct validity. In contrast, constructs have alpha, CR, and AVE coefficients higher than 0.70, 0.80, and 0.50, respectively, indicating convergent validity. All constructs have VIF coefficients below 5, showing no multicollinearity issue amongst the indicators.

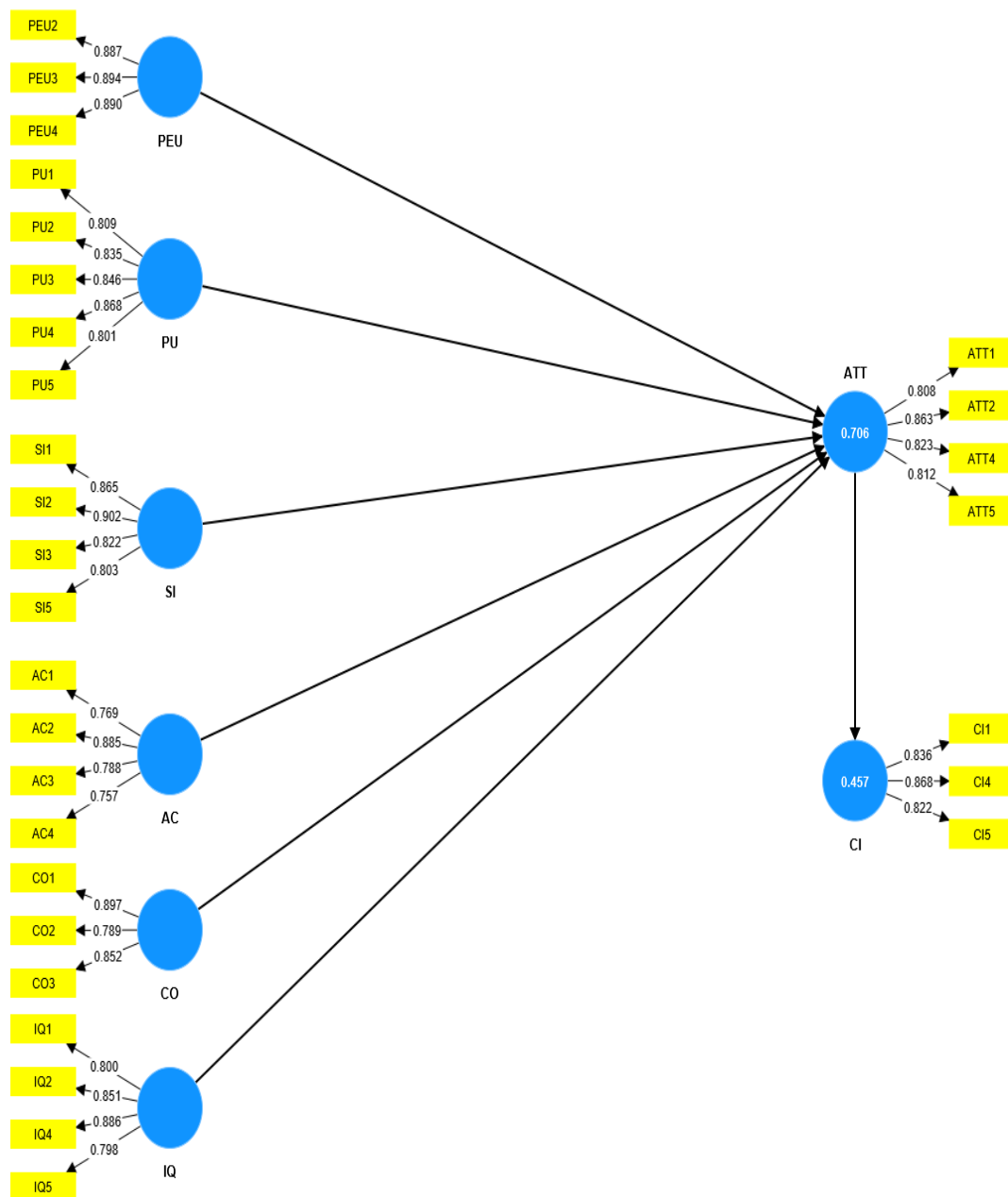


Figure 4.1: PLS Algorithm using SmartPLS v4

Discriminant validity

Discriminant validity is the level of distinctness of test results that theoretically represent different constructs (Campbell & Fiske, 1959).

Fornell and Larcker (1981) criterion

Table 4.4 provides discriminant validity results using FLC to examine the statistical differences between latent constructs that are theoretically unrelated (Ab Hamid et al., 2017).

Table 4.4: <i>Fornell-Larcker Criterion (FLC)</i>								
	AC	ATT	CI	CO	IQ	PEU	PU	SI
AC	0.802							
ATT	0.692	0.827						
CI	0.577	0.676	0.842					
CO	0.570	0.571	0.452	0.847				
IQ	0.741	0.673	0.597	0.642	0.835			
PEU	0.563	0.690	0.543	0.554	0.474	0.891		
PU	0.644	0.672	0.465	0.470	0.747	0.472	0.832	
SI	-0.631	-0.498	-0.478	-0.668	-0.683	-0.398	-0.765	0.849

The table above shows that the square root of AVE coefficients for particular constructs (shown in the bold diagonal values) are more significant than their corresponding correlation to other constructs, provided that constructs differ in their architectural pattern (Cheung & Wang, 2017). Hence, discriminant validity using FLC has been achieved.

Cross-loadings

Table 4.5 provides the result of cross-loadings for discriminant validity.

Table 4.5: <i>Cross-loadings</i>								
	AC	ATT	CI	CO	IQ	PEU	PU	SI
AC1	0.769	0.461	0.217	0.523	0.451	0.429	0.308	-0.415
AC2	0.885	0.651	0.492	0.484	0.696	0.555	0.549	-0.431
AC3	0.788	0.536	0.566	0.427	0.676	0.529	0.711	-0.750
AC4	0.757	0.549	0.542	0.407	0.524	0.278	0.472	-0.443
ATT1	0.582	0.808	0.458	0.686	0.522	0.588	0.488	-0.393
ATT2	0.573	0.863	0.650	0.457	0.620	0.578	0.691	-0.504
ATT4	0.581	0.823	0.470	0.489	0.605	0.554	0.614	-0.505
ATT5	0.557	0.812	0.641	0.273	0.478	0.562	0.419	-0.241
CI1	0.476	0.582	0.836	0.394	0.425	0.531	0.452	-0.449
CI4	0.561	0.587	0.868	0.338	0.485	0.456	0.320	-0.296
CI5	0.416	0.536	0.822	0.415	0.607	0.380	0.406	-0.468
CO1	0.494	0.489	0.509	0.897	0.549	0.559	0.346	-0.631
CO2	0.520	0.328	0.261	0.789	0.451	0.314	0.244	-0.452

CO3	0.461	0.576	0.352	0.852	0.601	0.489	0.537	-0.584
IQ1	0.570	0.452	0.503	0.558	0.800	0.444	0.463	-0.429
IQ2	0.669	0.574	0.497	0.710	0.851	0.459	0.620	-0.743
IQ4	0.661	0.632	0.551	0.509	0.886	0.510	0.728	-0.620
IQ5	0.566	0.566	0.442	0.377	0.798	0.171	0.647	-0.456
PEU2	0.521	0.546	0.497	0.566	0.511	0.887	0.392	-0.416
PEU3	0.456	0.649	0.527	0.548	0.431	0.894	0.560	-0.434
PEU4	0.530	0.637	0.428	0.376	0.339	0.890	0.303	-0.222
PU1	0.416	0.401	0.354	0.314	0.679	0.230	0.809	-0.583
PU2	0.602	0.528	0.352	0.352	0.645	0.321	0.835	-0.612
PU3	0.469	0.556	0.377	0.382	0.572	0.495	0.846	-0.617
PU4	0.595	0.612	0.535	0.410	0.625	0.426	0.868	-0.667
PU5	0.561	0.639	0.305	0.465	0.608	0.436	0.801	-0.680
SI1	-0.526	-0.466	-0.405	-0.627	-0.572	-0.482	-0.745	0.865
SI2	-0.620	-0.430	-0.510	-0.721	-0.676	-0.330	-0.595	0.902
SI3	-0.605	-0.436	-0.409	-0.480	-0.631	-0.323	-0.618	0.822
SI5	-0.361	-0.341	-0.273	-0.406	-0.408	-0.175	-0.633	0.803

Hair, Matthews, et al. (2017) and Hair et al. (2011) suggested that the latent constructs should have a higher indicator reliability than other constructs. The above table has shown that

indicator loadings are more significant in their theoretical constructs than in others, providing that constructs have attained discriminant validity using the cross-loadings method.

HTMT ratio

Table 4.6 shows the results of the discriminant validity using the HTMT ratio.

Table 4.6: HTMT Ratio								
	AC	ATT	CI	CO	IQ	PEU	PU	SI
AC								
ATT	0.829							
CI	0.703	0.817						
CO	0.720	0.666	0.550					
IQ	0.876	0.782	0.729	0.759				
PEU	0.666	0.800	0.651	0.640	0.556			
PU	0.737	0.753	0.550	0.512	0.850	0.518		
SI	0.746	0.573	0.569	0.766	0.770	0.446	0.859	

Henseler et al. (2015) and Henseler et al. (2016) suggested that discriminant validity has been established if the HTMT ratio between two latent constructs is less than 0.90. The above table has

shown that the highest HTMT ratio of 0.876 has been found between IQ and AC, establishing the discriminant validity.

Predictive power

Table 4.7 shows the results of predictive power for all endogenous constructs in the model.

Table 4.7: <i>Predictive Power</i>		
	R-Square	Decision
Attitude	0.706	Moderate
Continuous Intention	0.457	Moderate

Hair et al. (2011) indicated that R² between 50 and 75 percent is considered to have moderate predictability, whereas Chin (1998) suggested that R² more than 33% are considered moderate predictability. The above table has shown that attitude has a moderate predictability of 70.6%

and continuous intention has a moderate predictability of 45.7%.

Structural model

The structural model is the statistical technique to assess the hypothesized theoretical relationship between latent constructs (Hair et al., 2011).

Path analysis

Table 4.8 shows direct-effect analysis for hypothesis testing using PLS bootstrapping.

Table 4.8: <i>Direct-Effect Analysis</i>					
	Estimate	S. D.	t-Stats	Prob.	Decision
AC → ATT	0.243	0.053	4.602	0.000	Accepted
ATT → CI	0.676	0.033	20.600	0.000	Accepted
CO → ATT	0.199	0.058	3.445	0.001	Accepted
IQ → ATT	0.109	0.067	1.645	0.100	Rejected
PEU → ATT	0.312	0.056	5.592	0.000	Accepted
PU → ATT	0.442	0.074	5.979	0.000	Accepted
SI → ATT	0.325	0.080	4.082	0.000	Accepted
AC = Accessibility; ATT = Attitude; CI = Continuous Intention; CO = Convenience; IQ = Information Quality; PEU = Perceived Ease of Use; PU = Perceived Usefulness; SI = Social Influence					

Above table has shown that AC ($\beta = 0.243$; $p < 0.05$), CO ($\beta = 0.199$; $p < 0.05$), PEOU ($\beta = 0.312$; $p < 0.05$), PU ($\beta = 0.442$; $p < 0.05$), and SI ($\beta = 0.325$; $p < 0.05$) all have a positive but highly significant effect on ATT whereas IQ ($\beta = 0.109$;

$p > 0.05$) has a positive but statistically insignificant effect on ATT. Moreover, ATT has a positive significant effect on CI ($\beta = 0.676$; $p < 0.05$).

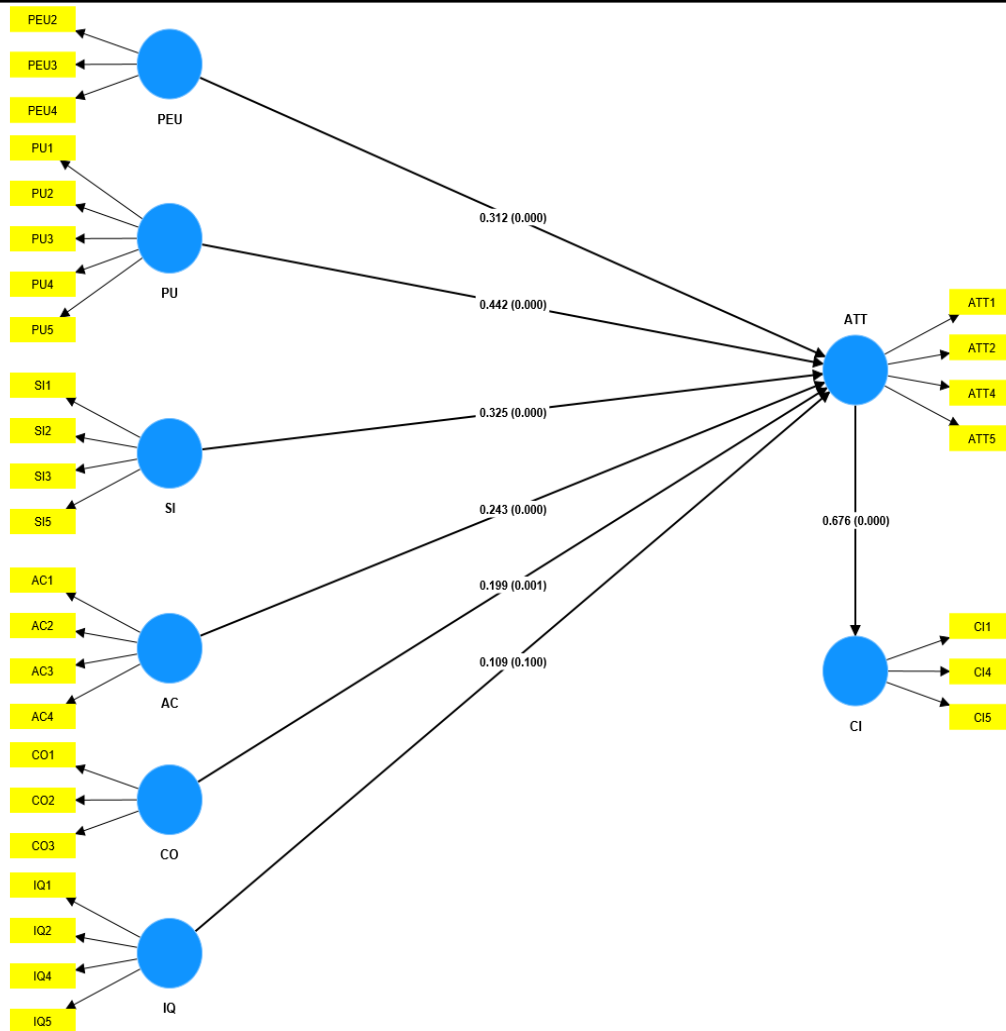


Figure 4.2: PLS Bootstrapping using SmartPLS v4

Mediation analysis

Table 4.9 shows hypothesis-testing for mediation analysis using PLS bootstrapping.

Table					4.9:
<i>Specific Indirect-Effect Analysis</i>					
	Estimate	S. D.	t-Stats	Prob.	Prob.
CO → ATT → CI	0.134	0.039	3.481	0.001	Accepted
PU → ATT → CI	0.298	0.049	6.088	0.000	Accepted
IQ → ATT → CI	0.074	0.046	1.621	0.105	Rejected
AC → ATT → CI	0.164	0.037	4.471	0.000	Accepted
PEU → ATT → CI	0.211	0.041	5.134	0.000	Accepted
SI → ATT → CI	0.220	0.054	4.080	0.000	Accepted

AC = Accessibility; ATT = Attitude; CI = Continuous Intention; CO = Convenience; IQ = Information Quality; PEU = Perceived Ease of Use; PU = Perceived Usefulness; SI = Social Influence

Above table has shown that CO ($\beta = 0.134$; $p < 0.05$), PU ($\beta = 0.298$; $p < 0.05$), AC ($\beta = 0.164$; $p < 0.05$), PEOU ($\beta = 0.211$; $p < 0.05$), and SI ($\beta = 0.220$; $p < 0.05$) all have a positive significant

effect on CI with the mediation of ATT. Moreover, IQ ($\beta = 0.074$; $p > 0.05$) has a positive but statistically insignificant effect on CI with the mediation of ATT.

Predictive relevance

Table 4.10 shows the results of predictive relevance for all endogenous constructs in the model.

Table 4.10: Predictive Relevance		
	Q-Square	Decision
Attitude	0.692	Strong
Continuous Intention	0.361	Strong

Hair et al. (2013); Hair et al. (2019) suggested that Q^2 values above 35% strongly relate to the structural model. The above table has shown that attitude has a strong relevance of 69.2% and continuous intention has a strong relevance of 36.1%.

Discussions

The study found a positive significant relationship between AC and ATT. This result is also supported by Kim (2021), who said that mobile phones have emerged as an essential device for grocery shopping due to their accessibility and ease. Grocery stores can give customers various options because of the increased number of mobile phone apps. AC and ATT are related because when customers have easy access to technology, they feel comfortable, which leads to positive intention for online and mobile shopping (Maat & Konings, 2018). Mastana (2023) also found that as AC and ATT are directly related, the more accessible a product is, the more positive the customers' attitude toward that product will be. Additionally, consumers' decisions to purchase a specific product online or not, as well as the share of online vs. in-store purchases, were mostly influenced by their desire to accept the new technology of e-shopping or their accessibility to shops.

Similarly, the study identified a significant positive effect of ATT on CI, which is also in line with Song and Jo (2023). It indicated that a consumer's ATT towards using mobile

applications is crucial in determining their behavior. ATT is closely related to consumers' CI if a product has effectively developed an emotional connection with them. As a result, customers are more inclined to purchase that product repeatedly, directly expressing their intentions for the product. Al Amin (2022) also said that CI is based on having a positive attitude, and if customers feel good about a product, they will be more likely to purchase it repeatedly. CI happens when customers are delighted and motivated to purchase the product repeatedly since their needs have been met. Customers acquire positive ATT towards online shopping applications when they believe they are helpful and easy to use. They trust more and have more positive attitudes (Bighrissen, 2021).

Additionally, the study found that CO has a positive significant effect on ATT. This result is also consistent with Prabowo and Nugroho (2019), who explained that CO or ease of use refers to the extent to which consumers believe that using a system or piece of technology would relieve them from difficulties. Most customers choose online and mobile shopping since they may save time and money, which is the main factor of convenience. Gruntkowski and Martinez (2022) also concluded that CO is directly related to attitude. The more satisfied customers are with the products and services, the more positive their behavior. Also, the depth and quality of the information, ease of use, and security are convenience factors in online shopping. Consumers' purchasing intentions are influenced

by the transactional and operational convenience of online shopping websites. Convenience is essential when purchasing products online and helps increase customer satisfaction (Khan & Khan, 2022).

In addition, the study identified an insignificant positive relationship between IQ and ATT. This outcome is also consistent with Patma et al. (2021) and revealed that customer satisfaction due to service may influence attitude. IQ does not impact attitude because customers continue to purchase products online for various reasons, including convenience, payment methods, trust, and psychological factors that might affect a customer's attitude. Online shopping platform's ease of use and effective technology predict customers' intention to embrace online purchasing (Zhu et al., 2020). Allah Pitchay et al. (2022) also stated that consumers regularly purchase after carefully comparing and evaluating products based on price, reliability, and design. Because of this, firms must provide their customers with a wide variety of products. IQ has an insignificant effect on ATT because online purchasing is convenient and time-saving. Time-saving methods are essential in every business operation since customers prefer quick fixes to other time-consuming procedures where they can make purchases swiftly and comfortably using online platforms.

Moreover, the study found that PEOU has a positive significant effect on ATT. This outcome is also in line with Kasuma et al. (2020), who said that the effect of PEOU on technological attitude varies on the particular technology or situation. Since mobile shopping is still a relatively new technology, ease of use may influence how customers feel about using mobile apps. PEOU and attitude are closely related, and consumers will develop a positive attitude when they receive products of better quality and are more satisfied with them. Once customers have a positive attitude toward a product, they stick with it and become devoted customers since they have improved the company's reputation (Kurniasari & Abd Hamid, 2020). Chung et al. (2022) also found that PEOU positively affects customers' attitudes and purchase intentions, especially

when they perceive that an online shopping website or app is simple and easy to use. The ease of finding product information and making payments online primarily influences consumers' preferences for both online shopping and the use of mobile applications.

Also, the study identified a significant positive effect of PU on ATT, which is also in line with Al Amin et al. (2022) and described that user acceptance, attitude, and behavior have a significant relationship with PU. "Usefulness" describes the consumer's perception that utilizing an online shopping channel, such as mobile applications, improves their purchasing experience. This influences customers' attitudes and intentions about online shopping (Bruwer et al., 2022). Khurana et al. (2023) also revealed that PU is associated with perceived advantages while purchasing on a mobile device, such as maximizing time savings, lowering transaction costs, and making grocery shopping more convenient. PU of a new technology affects how consumers feel about utilizing the technology. The acceptance of a new type of information technology by consumers has also been significantly affected by PU. Customers' attitude toward online grocery shopping increases When they realize how helpful these applications are.

The study found a significant positive relationship between SI and ATT. This result is also supported by Ruangkanjanases et al. (2021), who stated that SI has been considered one of the factors influencing the intention to utilize online grocery purchasing. SI may be described as an individual's perception of the need to accept a new system based on the person's value to them. SI is mostly about peer groups such as friends, family, social circles, or any online community like Facebook, Twitter, or Instagram. Therefore, it can be said that SI plays an essential role in determining whether consumers have a positive or negative opinion towards a product. Al Amin et al. (2022) also said that SI is related to societal norms, values, and social groups and is crucial in influencing consumer decision-making. Customers are switching to online purchasing as a result of this factor due to its widespread adoption (Maharani et al., 2022).

Moreover, the study identified that ATT has a significant mediating effect between CO and CI. This outcome also aligns with Mohammad and Szigeti (2023), who explained that CO indicates the advantages associated with customers' perceptions that purchasing online is much easier, less risky, and provides a wide variety of products. Customers are also more likely to have a positive attitude toward online shopping since it saves them time. Convenience has also been found to be the most important factor influencing customers' purchase choices (Omar et al., 2023). Hassan and Farmanesh (2022) also indicated that CO is a crucial indicator of willingness and customer attitude. ATT is an individual's overall assessment of the consequences of that behavior. CO and attitude are directly related; the more satisfied consumers are with the products, the more positive their behavior. A positive attitude encourages customers to reuse products. As a result, ATT and CI are also directly related.

Similarly, the study analyzed that ATT has a positive, significant mediating effect between PU and CI. This result also aligns with Vahdat et al. (2021), who concluded that ATT towards utilizing the system and the perceived utility of the mobile app, where attitude is a direct consequence of usefulness, define one's initial behavioral intention to embrace the system. Consumers have a positive ATT towards utilizing an app if they believe it will be helpful and meet their needs. This, in turn, affects an individual's decision to purchase a product (Lim et al., 2016). Jun et al. (2021) also stated that the persuasive effects of apps—which arise from their distinctive features—impact consumers' ATT regarding usage and CI. Customers interact with the product in many ways, such as sharing information and purchasing. An app is more likely to be used often and for extended periods when customers have a positive attitude. This improves "stickiness" and increases prospective customer's purchasing intention.

Likewise, the study found that ATT has a positive but insignificant mediating effect between IQ and CI. This result is also supported by Farhan and Marsasi (2023), who described that IQ describes

an individual's understanding of the quality of the information provided in a system. Before using an application for mobile shopping, customers will expect complete and up-to-date information and take into consideration the app's essential features. IQ is an important factor in online shopping, as customers seek to acquire inside information about the company and its products before purchasing (Zaato et al., 2023). Lee et al. (2019) also found that IQ is important in online and mobile grocery shopping since customers are more likely to purchase a product online if they are satisfied with the system's informational output. As IQ indicators, reliability, usefulness, timeliness, and understandability positively impact the customer's CI.

The study also identified that ATT has a significant mediating effect between AC and CI. This result also aligns with Shahzad et al. (2023). It indicates that AC and attitude are related because customers feel at ease with easy access to technology, leading to positive intentions for mobile shopping. CI is strongly influenced by the mobile shopping app's usability, comfortability, benefits and accessibility. If customers are delighted with the technology, they will recommend it to others, and this positive ATT will turn them into devoted customers who continue purchasing the product (Dhahak & Huseynov, 2020). Zhao and Bacao (2021) also found that the success of any technology used for online commerce is also greatly dependent on accessibility. It is crucial to provide easy-to-access product facilities to attract customers and keep them around for a more extended time so they may make repeated purchases.

Moreover, the study found that ATT has a significant mediating effect between PEOU and CI. This result also aligns with Ariffin et al. (2021), who described PEOU as the degree or situation at which an individual thinks using a specific technology will be easy. ATTs are cognitive responses to an activity and indicate how much effort people are prepared to put forward. As a result, because utilizing mobile applications is easier and more service-oriented, there is a greater inclination to employ the

technology (Aslam et al., 2021). Chaveesuk et al. (2022) also found that PEOU and ATT directly influence one another, and both play essential roles in developing brand image and convincing customers to purchase a specific product, which encourages customers to behave positively towards CI while making purchases. ATT has also proven to be a reliable indicator of CI's use of mobile apps for grocery shopping. Customers are more likely to have a positive attitude towards using technology if they benefit from it.

Lastly, the study showed that ATT has a positive significant mediating effect between SI and CI, which is also in line with Wang and Cao (2022) and identified that SI influences continuous intention via attitude regarding using a mobile app for online purchasing. When users feel that their communities and peers enjoy the app, there is less perceived risk and a positive attitude towards its use. Positivity increases consumer trust and assurance to purchase a product (Foroughi, Iranmanesh, et al., 2023). Gao et al. (2022) also said that SI influences consumers' ATT to use new products and technologies. The more peers value using emerging technologies, systems, or facilities, the more likely they will adopt them. Individual ATTs may be impacted by the perception of widespread adoption, especially in their social circles, since potential adopters are more likely to see the technology in use and may be persuaded that it is beneficial.

Chapter No 5

Conclusion and Recommendations

Conclusion

The study examined the mediating role of attitude between ease of use, usefulness, social influence, accessibility, convenience and information quality on continuous intention among m-commerce consumers of Karachi. For this purpose, the study has collected 238 responses from the sample population using convenience sampling technique and a five-point Likert scale questionnaire. The study has employed PLS-SEM technique for data analysis using SmartPLS. The study concluded that accessibility, convenience, ease-of-use, usefulness and social influence positively affect continuous

intention with the mediating role of attitude while attitude does not mediate between information quality and continuous intention.

This manifested that m-commerce gives customers accurate information to give them a competitive edge over competitors. M-commerce is also the best at facilitating improved information exchange, a quicker time to market, and more effective supply chains. Both consumers and merchants have benefited greatly from the m-commerce channel, and it is simple for customers to make an order at any time of the day. The most crucial component of online shopping is that the Internet gives customers a platform to place orders and access information. Additionally, m-commerce helps consumers and companies by enabling access to products and services at cheaper costs during business activity. Internet technology tremendously impacts consumers' purchasing behaviors and processes in this digital age. M-commerce has also allowed firms to expand their physical footprints and allow customers to make purchases online, which is good for their reputation.

Additionally, mobile applications are crucial since they can be used to scan bar codes and process payments. As a result, some companies have introduced online mobile apps that make it simple for customers to access their products, information, and payment methods. Mobile technology advancements have changed the nature of customer-company relationships. Customers' perception of ease and usefulness with mobile internet services also strongly indicated their propensity to use mobile technology. Similarly, information quality is widely used to evaluate the effectiveness of information systems. It has been found that information quality substantially influences usefulness, ease of use, attitude, trust, and satisfaction in an online environment.

Theoretical implications

The research contributes to the present literature by employing the Stimulus-Organism-Response (SOR) model to explore factors that influence the re-usage of online and mobile grocery shopping among young adults in Pakistan, thus extending

the current literature (Gao et al., 2022). The SOR model has been employed in this context by the study and therefore, the study has theoretical implication for the companies since it provides understanding on how companies can deliberately enhance re-usage intention, customer loyalty and hence long-term success within the competitive m-commerce industry (Zaato et al., 2023)

The results of the study indicate that social influences, accessibility, convenience, information quality, perceived ease of use, usefulness, and attitude have a positive and significant effect on the continuous intention (Ariffin et al., 2021). Finding from the SOR model reveals that there are factors that affect the positive re-usage intention of online and mobile grocery shopping among young adults in Pakistan; the factors include social influence, accessibility, and convenience. Information quality and perceived ease of use too are vital in creating the continuous intention and positive outcome (Wang & Cao, 2022).

This research added value to the previous findings on consumers' continuous usage intentions for m-commerce platforms and presents a novel view on how online and mobile grocery shopping platforms can enhance consumer loyalty, thus extending the prior work (Lee et al., 2019). The study is significant in theory because it seeks to extend the understanding of cultural variables on the S-O-R model in light of cultural variability in Karachi. This paper also explored how this diversity impacts young people's motivations for re-engaging the online and mobile grocery shopping services. Stimulus attributes such as social influence and cultural factors, and their influence over organismic responses such as attitudes, provide a more comprehensive understanding of the m-commerce phenomena (Ariffin et al., 2021). Technological advancement is identified in the research as factors that drive the SOR model and thus underlines the importance of technological advancement in view of the fact that it helps to sustain customer engagement and loyalty (Wang & Cao, 2022). Accordingly, the study supports the enhancement of state-of-the-art functionalities

in m-commerce applications in order to encourage the continued intention of customers, and thus contribute to the debate on the role of technology as stimuli (Omar et al., 2023). In addition, as environmental concern has become a major issue in the world and affects consumers' decision making process, the study also recommends that the environmental sustainability should be included as a potential stimulus in the SOR model.

Using this theoretical framework the study aimed to explain the relationship between environmentally friendly behaviors and young adult's behavioral intention to continue using their mobile devices for online shopping of groceries (Omar et al., 2023). All in all, the study enriches the theoretical construct of the SOR model by integrating cultural factors, technological progress, and environmentalism (Gao et al., 2022). It offers a richer understanding of how cultural heterogeneity in Karachi affects stimuli and organismic processes, which is useful for enhancing m-commerce strategies that are appropriate for the culture of Pakistani youth (Gao et al., 2022). This emphasis on technology affirms the need to develop m-commerce platforms through innovation while the consideration of environmentalism gives a new perspective on the consumer behavior in relation to m-commerce. Thus, this study enhances the understanding of the theoretical framework for m-commerce usage, and thus, presents useful recommendations for both academic scholars and business professionals.

Practical implications

The study provides useful information about online and mobile food purchasing among Pakistani young people for managers and m-commerce platforms. Important suggestions include making interfaces more user-friendly, making sure that navigation is clear, and speeding up transactions to improve the overall user experience. A wide range of payment choices and effective delivery services are essential to increase client satisfaction and promote repeat business. Building trust is essential and necessitates

financial investments in strong cybersecurity defenses, open policies, and partnerships with reliable payment processors. Customer retention is aided by competitive pricing, ongoing product improvements, customer feedback, and loyalty initiatives.

Additional factors that influence re-usage intention include timely customer service, social media presence, mobile app optimization, and sporadic promotions. Brand exposure and peer influence are increased via working with influencers and investigating social commerce features. Gamification components increase engagement, fostering a feeling of success and encouraging repeat business. By putting these useful recommendations into practice, platforms may build a loyal clientele and prosper in the cutthroat industry, which guarantees flexibility and long-term success.

The push for re-usage intention is further strengthened by optimizing mobile applications, keeping up a purposeful social media presence, offering prompt customer service, and holding recurring promotional events. Influencer partnerships and social commerce features increase brand exposure by utilizing peer influence to increase intention to re-use. Gamification components give an interesting touch and encourage clients to come back by giving them a feeling of success. By putting these useful recommendations into practice, platforms may build a loyal client base that will support them in the long run and provide them with resilience in the fiercely competitive and always changing market.

Limitation of the study

The current study has some limitations that limit the generalization and practicality of the findings. Firstly, the study's findings and recommendations may be limited by the size and representativeness of the sample used. If the sample size is small or not adequately representative of the entire young adult population in Pakistan, the results may not accurately reflect the broader market sentiments and behaviors. Similarly, the study's focus on Pakistan's young adults may restrict the idea or concept's generalizability to other regions or

demographic groups. Cultural, economic, and social differences between regions could influence re-usage intention.

Additionally, data gathered through surveys or questionnaires may be susceptible to self-report bias, which occurs when respondents provide socially desired responses rather than genuine thoughts or habits. This bias may have an impact on the findings' accuracy. In addition, the study may find relationships between specific parameters and re-usage intention, but it may not prove a cause-and-effect relationship. A more thorough study, including experimental designs and controlled investigations, would be required to determine causation. Lastly, this limitation should be considered when interpreting and applying the study's results to broader contexts. The study, however, ignored the phenomenon's comprehensive viewpoint and in-depth perspective because it was purely quantitative.

Future research directions

Further research directions for the factors affecting re-usage intention of online and mobile grocery shopping among young adults in Pakistan ought to overcome the limitations of existing studies while also exploring new paths of inquiry. Initially, conducting longitudinal studies over an extended period would allow researchers to track changes in re-usage intention and shopping behavior over time. This approach would provide a more comprehensive understanding of how factors evolve and influence customer loyalty in the dynamic m-commerce landscape. Additionally, future research could compare re-usage intention patterns among different demographic segments, such as gender, socioeconomic status, and urban/rural dwellers. This comparative analysis would show how various groups respond to different factors and help tailor managerial strategies accordingly.

Moreover, future research must conduct cross-cultural studies comparing re-usage intention across various countries and regions to reveal culturally specific influences on online shopping behavior. Such research would enable businesses to adapt their strategies to suit the preferences and expectations of diverse customer groups.

While quantitative studies provide valuable statistical insights, conducting qualitative research, such as focus groups or in-depth interviews, can offer deeper insights into the motivations, perceptions, and barriers influencing re-usage intention. This approach would provide a more nuanced understanding of customer attitudes and behaviors. Also, it would be beneficial to investigate the exact features and design components of mobile apps that increase re-usage intention. Understanding the factors that positively impact user experience on mobile devices can help companies optimize their apps for increased customer retention. Thus, future studies should take this into account.

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