

# The Determinants of Customers' Intention to Use Smart Lockers for Last-Mile Deliveries: A Case of Pakistan

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The purpose of this study to analyse the determinants of consumers' intention to use smart lockers in last mile delivery in Pakistan. Synthesized theories of perceived value, transaction cost economics and resource match theory. Survey of the questionnaire gathered from 375 respondent of the densely populated city of Pakistan, Karachi using SEM analysis. The findings show that the five dimensions (Convenience, Reliability, Corporate Image, Service Quality, Privacy Security) and mediating variables (Transaction cost and Perceived Value) effects on consumer intention. This study enhances the area of study in logistics and e-commerce transaction deliveries to the end consumers with the use of technology.

**Key words:** *Last Mile Delivery, Smart Locker, E- Business, Logistics, Consumer Intention*

## 1. Introduction

### 1.1 Background

The digital world in current years has developed the customers' consignments volume globally. In the last 4 years, trades of e-businesses increased by approximately US\$2.4 trillion. (Deutsch and Golany, 2018) assumed the transactions of e-business hit almost US\$6.5 by 2021. Therefore, this has increased the market for last-mile delivery, that has been described as the final stage of trade to customer package delivery where the consumer gets the delivery at residence or receive it through a specific geographical location. In practice, the productive strategy of last-mile delivery is essential because, this point responsible for almost 70% of the carrier expenses (Brown and Guiffrida, 2014). Minimize the expenses of point delivery, carriers are initiated the concept of smart lockers in familiar points, for instance, University,

bus stops, working places including areas that are close to city neighborhoods (Song et al., 2016).

Most of the points in the method of delivering products to customers had substantial changes throughout the period and being handled in a reliable and efficient way, for instance, moving products through train carriage points to a specific distribution center or with a cargo carrier to a dock. Therefore, the ending method of delivering the products at consumers' destination is usually not much productive, as well as the costly and environmental clogging aspect, containing 29% of the expensive budget of delivery (Goodman 2005; Spiegler 2004). Investigating the processes to enhance the endpoint distribution characterized by the transportations last-mile challenges in Pakistan.

However, the challenges of final destinations not only relate to the E-transactions and commercial sector of Pakistan. Therefore, in that same study, we concentrate in online trading distribution. Smart lockers can provide visible rooms for the collection of important documents and packages because, smart lockers can be user friendly, web-linked, and automated e-system to provide information with wireless devices. Using smart lockers can minimize the challenges for delivery return costs in addition, smart lockers provide easiness to consumers where they can collect their parcels in scheduled time frame without misplacing. Yuen et al., (2020) stated that the using of smart lockers saves the cost of firms which occurs due to reshipments.

On the other aspect of consumers, smart lockers also eliminate the delaying of parcels at their residence (Djelassi et al., 2018). Consumers parcels are placed in transit which can be obtained from smart lockers in free time. Smart lockers provide vigilance of orders to consumers where they can trace parcels and instead of worrying about parcels customers get their orders in minimum time according to their accessibility. Lastly, across living aspect smart lockers decreased other external issues like crowded logistics, delays, road disturbances, and emissions due to merged carriers and fewer distribution journeys (Chen et al., 2017; Ranieri et al., 2018). Considering the advantages of smart lockers, different authors indicate that consumers are afraid to acquire packages due to concerns of the consumer laziness high tech insecurity, discomfort, and deceptions, that consumers experienced in using smart lockers (Collier et al., 2015; Lee and Lyu, 2016; Wang et al., 2018a).

However, to investigate the reasons to understand the consumers behaviour and intention to accept this technology in Pakistan for their comfort. Such studies provide the support to understand the acceptance of e-system (Lin and Chang, 2011), the theory of planned behaviour (Blut et al., 2016), innovation diffusion theory (Yuen et al., 2018a), motivation theory (Oh et al., 2013), and theory of reasoned action (Wang et al., 2018b). However, researchers focused and separate this from available researches and increase the understanding of smart lockers by integrating it with different consumer theories to elaborate on the consumers' willingness to use e-system in last-mile packaging.

In particular, it combines the (1) resource matching theory (Chen et al., 2018), which explains a customer's cognitive resources affecting his or her intention, (2) perceived value theory (Yuen et al., 2016), which explains the process of value creation that leads to customers' intention, and (3) transaction cost economics theory (Weber and Mayer, 2014), That may illustrate how consumers minimize similar to trade expenses and thereby, draw consumers' intentions. focusing on the analysis of certain theories, a variety of structures that influence the usage of smart lockers by buyers are defined and their linkages are listed. Besides, researchers focused on the digital transaction and last mile distribution concerns to consider it through providing a comfort to the e-consumers of Pakistan meanwhile, in the researcher measure the intentions of consumers by adding more variables which are extracted from theories and previous studies to specify the of consumers decisions to use smart lockers in Pakistan.

## 1.2 Problem Statement

According to Ali et al., (2020) recent pandemic (COVID-19) affected the daily routines of social life. For that purpose online businesses are growing and expanding their operations in different countries and areas, due to that they are also facing the issue of non-availability of products on the day and non-availability of consumers as well. The researcher aims to investigate the determinants of customers' intention to use smart lockers for last-mile deliveries in Pakistan. There are many studies conducted on last-mile deliveries, Allen et al., (2018) has focused on Identifying the effect of e-commerce on the operation of last-mile fast commercial vehicles in metropolitan centers. Zhou et al., (2020) conducted a study on assessing the actions of customers to implement self-service courier systems for last-mile delivery. However, Kum et al., (2019) Indicators of the consumer's desire for using smart lockers over the last mile delivery, but Kum et al., (2019) have not studied the dimensions of corporate image, product knowledge, and service quality. Therefore, this study has focused on variables to find the impact of consumer intention to use smart lockers.

## 1.3 Research objectives

The core goal of this study to find the determinates intention to use smart lockers.

- To identify the concept and scope of last mile delivery in Pakistan.
- To identify the concept and scope of consumer intention.
- To identify the concept and scope of convenience.
- To identify the concept and scope of privacy security.
- To identify the concept and scope of reliability.
- To identify the concept and scope of corporate image.
- To identify the concept and scope of service quality.
- To recognize the relationship between consumer intention in using last mile delivery.
- To recommend the strategies to enhance the consumer intention to use smart lockers for last mile delivery.

## 1.4 Research significance

This study enhances the understanding of distributor firms and e-commerce businesses because consumers of digital traders increased during the last 5 years in Pakistan. The researcher focused on the disruptions of orders due to the non-availability of consumers at the time of delivery. However, E-commerce has increased its roots in contrary challenges of e-commerce also creating hurdles for the digital sector of Pakistan. This study supports online businesses and distributor firms to focus on the strategies of using technology for delivering the orders and minimize the cost of product returns. This study also brings changes for distributor firms to create and enhance transactions visibility at the consumer point to gain the retention and loyalty of customers.

## Chapter 2: Literature Review

This study has been developed with the help of three different theories. 1) Resource Based Theory 2) Perceived Theory, and 3) Transaction Cost Economic Theory. These theories have been adopted from the study of Yuen et al., (2019) to investigate the intention of consumer to use smart lockers.

### 2.1 Resource Based Theory.

Resource based theory can be define tangible and intangible assets firms use to conceive of and implement its strategies” Barney and Arian (2001). It is primarily a customer utility theory (Pappas et al., 2016) for explaining how the reduction in effort in using smart lockers can raise customers' perceptions of their utility and thus reinforce their intention to use smart lockers. The study of Martin et al., (2005) supposed that when resources like time, money and effort match the consumers available resources then customer acquire the benefits of it. The theory support that if the intangible resources match the consumers availability his intention to use smart lockers can motivate the person to use the services. Consumers intention depends on the ability of availability of resources Yuen et al., (2019). In this study resource-based match theory posits to analyse the intention of consumers for accepting technology to save time and reducing of effort resource for getting parcels from specific point.

### 2.2 Perceived Value Theory.

The philosophy of perceived value assumes that the value considered by clients It is extracted from the assessment of the advantages and costs of buying a goods or service. (Immonen and Koivuniemi, 2018; Yim et al., 2012) stated that literature of perceived value showed that its divided in four aspects (Social utility, hedonic, functional, and economic). However, getting resources in comfort and easily to the consumers available time frame this study envisage that the dimensions like (reliability, convenience, privacy security) stated in study of Yuen et al.,

(2019) added two more dimension like (Service quality and corporate image) to evaluate the consumers intention to use smart lockers.

### **2.3 Transaction Cost Economics Theory**

In the opposite, the philosophy of transaction cost economics finds the overall cost involved in purchasing it to be analysed above the price or advantages of a commodity (Kozlenkova et al., 2014). Ronald (2016) Conclude the transaction cost that the reduction of negative externalities would lead to an optimal distribution of capital, maximise productivity and consequently reduce transaction costs. The considering of transaction cost in the perspective of services to assess the consumer intention to use smart lockers. In addition, the transaction cost has two effects in which to identify the opportunity cost result and association of cost with other sources like searching and sourcing of information for intention to use of smart lockers

### **2.4 Convenience**

Convenience can be described as the energy and motivation customers employed to buy commodities instead of features or traits of good (Brown 1990). Furthermore, (Etgar 1978) said that considering the value, benefits and sources that influence the customer to acquire that commodity and support, convenience factor decreases the cost of product in sense of efforts and risk. Convenience can provide a sense of easiness to consumers where they can invest their amount with the sense of comfort which they get from an source or an platform. Businesses are changing their operations from manual to online sources due to many reasons like global competition, consumer easiness and attracting more customers with their digital operations. Convenience is basically a source where consumers feel to spend more money. Mehmood, & Najmi, (2017) findings determine the effect of service comfort on consumer retention in online ordering has been performed. The outcome of the analysis demonstrates that all the independent factors (Decision Convenience, Access Convenience, Transaction Convenience, Benefit Convenience and Post-benefit Convenience) have favourable results on consumer contentment where only one variable shows the insignificant relationship in convenience. This illustrates that consumer loyalty is not influenced by proximity to service providers because they view internet purchases as an important online shop, on which they can fulfill the buying process on their own. In order to improve customer loyalty, it is suggested that e-stores should concentrate on the provision of convenience facilities. Meanwhile, Kumar et al., (2020) Examined the effect on comfort of e-businesses convenience aspects on emotional purpose, respondent selected through purposive samplings and users of online sources for their convenience purchasing. the effect on comfort of e-businesses convenience aspects on emotional purpose the Impact of e-Retailing Convenience Dimensions on Behavioral Intention on convenience respondent selected through purposive samplings and users of online sources for their convenience purchasing.

The findings shows that convenience influence customers intention in online transactions and consumers satisfactions has significant results on this. The core objective of this research was to investigate the influence of determinations of convenience (access, transaction, decision, benefit, and post-benefit convenience) to analyse the e-purchasers behavior and intention. Seeing as convenience is among the key reasons for the consumer to accept internet buying, it is important to gain a comprehension of the facets of convenience for internet purchases and their effect on experience and continuance intention. authors results also suggest that there is a significantly important effect on behavioral purpose on judgment, transaction, benefit, and post-benefit ease. the findings also indicate the mediating effects on e-facilities factors by comfort of psychological intention. Meanwhile, Yuen et al., (2019) investigate the components of consumers' willingness to use smart lockers for last mile deliveries.. By optimizing the convenience, protection of privacy, and efficiency of smart lockers, perceived utility or transaction costs can be increased by reflecting on the successful balancing of the intellectual resources of consumers. The impacts of convenience, privacy security, and durability on the purpose of consumers for using smart lockers are interlinked through perceived value and transaction costs. The overall study of results indicated that perceived value seems to have the greatest impact on the intention of consumers utilise smart lockers, accompanied by efficiency and comfort. The lowest impact on the purpose of consumers is the privacy security and transaction costs.

H1: Convenience of using smart locker is positively associated with perceived value.

H2: Convenience of using smart locker is positively associated with Transaction cost.

## 2.5 Privacy Security

Zeithaml et al. (2002) stated that the Security is the preservation of confidential records, while confidentiality is the safety of consumers against theft and financial damage. Privacy refers to a collection of regulatory factors and ethical guidelines for the processing of sensitive data, while protection refers to technological assurances to ensure that the legislative formalities and privacy practices are adequately fulfilled. In internet purchases, Kim et al. (2006) considered anonymity to be of vital importance for consumers. However, privacy security is to manage and secure all consumers data from other sources to gain consumers trust, privacy security can be defined a personal information through which someone can access others internet related sources like transactions, e-transfers and accounts. Verma et al., (2020) examined the aspects, such as anonymity, morale, protection, and the credibility of the company. The study's outcome concludes with a discussion that the credibility of confidentiality, loyalty, protection and organization has a substantial effect on e customers' online shopping intention. To raise revenue in the e-businesses market, it is advisable to pay consideration on these variables. Of all the variables that mean that participants from the chosen area lack faith in e business, the trust aspect is considered to be the most relevant factor. Therefore, internet sites that meet the needs of potential customers should be established by e-commerce organisations. In addition, an embedded model for realizing the affects on customer purchasing choices in India's e-

commerce market climate has been developed intention priorities. furthermore, e-commerce companies are advised to pay extensive consideration to factors such as privacy, security and credibility in order to draw more buyers. It is also believed that the privacy strategy of the organisation would not have a substantial effect on the intention of customers to buy online. Feather et al., (2010) stated the ways to minimize the threat of privacy and its consequences is investigated in order to increase the implementation of e-system. The study finds that the customer trusts that the e-service would be convenient to use and that the e-service company is trustworthy and confident of reducing the threat of privacy and its consequences, thereby increasing the probability of acceptance. Model for assessing privacy risk, and also discusses some risk avoidance tool for privacy. It noticed that security and usability issues impacted the risk of privacy, which in turn shaped the e-perceived service's utility and the plans to use it.

Comprehensively, the findings combine digital privacy and security analysis to that of perceived danger to re-focus the predictors of customer e-service assessments that include, in addition to the potential advantage of acceptance (here usefulness), the possible risk of acceptance (here privacy risk). The findings include proof of the anticipated detrimental effects on customer e-service utility assessments and user intentions of the measured privacy danger. In addition, the present experience of internet purchases is reflected by the casting of customer acceptance options that provide all future advantages and costs. Review of the results reveals that after weighing all possible advantages (effectiveness) and drawbacks (privacy risk), users choose to use or refuse to use the online platform. E-service companies need a considerable amount of private information for customized service distribution, whereas sales of physical items that need less confidential information. Significant risk to privacy may impact customer assessments and the use of several forms of financial services for online shopping where the danger to finance follows, and may intensify, the threat to privacy. The results Soodan & Rana (2020) shows that the decision to use e-wallets is driven by a variety of variables that contribute to the opinion of consumers regarding safety, protection, price value, advantages, etc. The findings suggest that the decision to accept e-wallets is affected by hedonic incentive, perceived security, basically privacy, supporting circumstances, success desire, perceived benefits and impact on society, and price value throughout this order. The difficulties which have a adverse effect on the usage of the e-wallet are addiction and effort expectation. Service providers can protect consumers' privacy and protection and involve clients by changing the selection and capabilities of current networks. It is noted that the boomer population of Indian customers are highly skeptical of IS/IT services particularly the exchange of details related to personal and banks. The findings also show that customer protection issues have a greater impact on the production of intention relative to the fear of losing personal data. Nevertheless, in the face of need (at the time of demonetization act passed in the era in India), customers from all parts of societies and life-cycle stages were prepared to use information technology facilities through mobiles with substantial cyber-attacks, and now a primary concern, automated encryption and privacy will serve as a powerful user motivation.

H3: Privacy Security of using smart locker is positively associated with perceived value.

H4: Privacy Security of using smart locker is positively associated with Transaction cost.

## 2.6 Reliability

Reliability has been described in conventional service quality analysis as the capability to conduct the necessary service adequately and consistently (Parasuraman et al., 1988). Reliability is described as smart locker services' continuity and effectiveness (Narteh, 2015). Reliability can be defined as the term where a consumer feels a trustworthy either in services or facilities which are providing by a organisations at any platforms. Shao et al., (2020) stated that a current growth pattern for the urban transit service is generated by the growing use of smart bicycle-sharing and the e - scooters bicycle design. Findings indicate that place efficiency, timely response, flexibility, payment security and liveliness show varying degrees of effect on the confirmation of a bicycle-sharing facility by customers. In addition, the confirmation of clients is strongly linked to perceived usefulness and happiness, which further strengthens their intent to proceed. The study shows that men and women respond to the five attributes of service separately. In specific location stability and vibrant presence are more probably to impact male users, while female users rely more on activity security. Wolfenbarger & Gilly (2003) examined that in all product and service environments, consistency is associated with consumer satisfaction, engagement and attachment.

Results shows that decisions on the content of an online platform are more closely linked to webpage architecture variables and fulfillment/reliability. An essential contrast around them is that worker customer expectations play a major role in SERVQUAL, while retail relies on the business as an individual. That is, as customers communicate with companies, through some kind of technical interface, they assume that they are communicating with an entity, not an individual. Website architecture is a modern factor that greatly impacts the expectations of consumers regarding their shopping experience. As specified in SERVQUAL, reliability includes continuity of quality and durability. Fulfillment/reliability in eTailQ, on the other hand, relies on the consistency of the commodity representation on the internet, the consistency of the transaction and on-time delivery, qualities that are unique to retailers. Chen et al., (2020) suggested a TBE chart device highly developed design to minimize the loss in goods functionality induced by production. Charts of limit control for person are collectively maximized to mitigate operational performance deterioration in high-quality operations by specifying the quantitative model among CTR operational quality variables (such as dimensional differences and internal defects) and commodity reliability deterioration, and the proposed design is shown to dramatically increase batch consistency under different paragraphs. Moreover, in some situations, the proposed model will also save system running costs on the basis of achieving minimal loss of efficiency, and this trend is not uncommon. In the opposite, there are still two key shortcomings of this implied maximisation model. implementation of this system model at the start will lead small changes in system inaccurately

and cost of average operating are appropriate in minimizing the consistency loss given by the effects of model.

H5: Reliability of using smart locker is positively associated with perceived value.

H6: Reliability of using smart locker is positively associated with Transaction cost.

## 2.7 Corporate Image

Zeithaml and Bitner (1996) said the term 'picture' in the marketing field could be defined as a form of skill influencing the attitudes of consumers related to the services and goods offered by promoters, which typically has a major impact on consumer buying. Brown and Dacin (1997) concluded that the corporate image arises from the expectations of competence and social accountability of clients. Corporate image defines perceptions and connections in line with the viewpoint of current marketing, which is described as perceptions and attitudes gathered from the perceptions of consumers about specific companies (Barich and Kotler, 1991). Corporate image means that how your consumer perceives you in sense of products and services. Corporate image is one of the most important factor to create high quality product knowledge in market. The analysis by Zameer et al. (2015) claimed that the effect on the expected importance to the consumer in Pakistan of the standard of service rendered by banks in Pakistan, the level of consumer satisfaction obtained via these services, and the corporate image of the financial institution. The findings of correlation analysis show that all these variables are relevant and strongly correlated with each other which means that increasing the quality of service leads to an enhance the satisfaction of the consumers, and conversely, a second increase in consumer satisfaction leads to a strong corporate image. The findings show that the corporate image often influences the perceived worth of the consumer. Through using creative communication techniques, banks will strengthen the picture and disclose data about their offerings by making meaningful statements about their potential goals and objectives. The authors concluded that all variables have a very important influence on each other. According to the study of (Lee 2019) examined that the effect of corporate social responsibility on customer loyalty and examine the role of corporate image and consumer satisfaction. The findings of this research to get a more systematic theoretical and empirical framework for examining the effects of CSR on consumer loyalty and exploring the role of corporate image in the life insurance sector and consumer satisfaction. In the interactions between CSR and customer loyalty, this research examines the mediating impacts of customer satisfaction and the moderating influence of the corporate image on the relationship between CSR and customer loyalty in the insurance sector. The results indicate that a positive brand attitude for customers can be generated by the corporate image and encourage a consistent loyal relationship in the life insurance industry. Moreover, the results of this research also give sufficient knowledge for the significance of corporate image and consumer satisfaction as CSR and customer loyalty metrics, and the adoption of long-term initiatives in the life insurance sector to improve consumer loyalty. While Younis & Hammad (2020) explores the essential

factors influencing the organisational competitiveness of the corporate image and employer image. These findings provide clear proof of the ability of corporate image to improve organisational appeal and employer image directly. In addition, this study shows that in the case of a prospective employee, corporate reputation will play a great role in establishing a positive image of the employer. Probably, the organization's performance in satisfying consumer needs is a message to candidates that the organisation will meet the needs of workers in return. Although the interpretation may not be accurate or practical, due to the inadequate job experience and limited knowledge, candidates may also prefer this viewpoint.

**H7:** Corporate Image of using smart locker is positively associated with Perceived value.

**H8:** Corporate Image of using smart locker is negatively associated with Transaction cost.

## 2.8 Service Quality

Tjiptono (2000) explains that in order to balance consumer preferences, the concept of service quality is based on satisfying consumer preferences and desires and execution precision. Operation Encounter perfection (Rust and Oliver, 1994). In terms of dominance, service efficiency is the ultimate experience of the consumer (Bitner and Hubbert, 1994). The standard of service is a result of advantages provided by one user to another individual. When the user has the pleasure of using or purchasing something from other suppliers in a purchase context and it means something to the consumer until he pays money and shares the burden of purchasing aids. According to the study of Kouthouris & Alexandris (2005) shows that utilizing the SERVQUAL model for 4 key Islamic banks in the Sultanate of Oman. The findings of the correlation exhibited a strong association among the three variables: level of service, happiness of customers, and loyalty of customers. Likewise, the findings of regression found that the dimensions of empathy and responsiveness had an important positive effect on consumer satisfaction. Therefore, it is proposed that banks should concentrate more on empathy and responsiveness, taking into account the critical relationship between these two factors and customer satisfaction. Banks do not however, ignore the significance of other factors such as reliability, assurance and tangibles, which are exposed as important to the bank's requirements by the respondents' answers. Cahyono et al., (2020) investigate the impact of the quality of service, the image of the university, student satisfaction on student loyalty, to evaluate the effects of student satisfaction on student loyalty in Indonesia's private universities. This analysis thus concludes that quality of service has a positive and important impact on student commitment. The quality of service has a significant impact on loyalty. This illustrates that an improvement in the standard of service has an effect on loyalty. In order to enhance service efficiency, the relationship between universities and students makes the institution feel relevant. Students can be pleased with good service and can be a basis of knowledge and guide for other students or other potential students. The dimension of service quality then serves as a guide to an overall appraisal of service quality, which in turn affects the strength of their client relationships, and their behavioral intentions thereafter. For the creation of good customer relationships, increased service efficiency is crucial. It can be achieved by improving the

quality of service, namely by improving aspects of tangibles, empathy, efficiency, reactivity and assurance, to enhance picture. through the student satisfaction during learning / lectures, the reputation of the university can also be enhanced. Meanwhile Ejdy & Gulc (2020) findings suggest that the sustainable services, service quality perceived by customers should be a key factor. The findings acquired demonstrated statistically significant ties between the factors of convenience of use and trust in service, usefulness and confidence in service, trust in service and quality of service, and eventually, quality of service and expected intention adopt services. the findings of the authors assured the value and role of technological side of parcel service providers quality, that are dominant factors in future in this industry's growth. A new strategy to the concept of trust in service was suggested by the researchers. They give some insight on the trust in the vendor, i.e., the trust in the technology used, other than source credibility. The findings acquired verified statistically significant ties between the indicators or the convenience of use and trust in service, the usefulness and trust in service, confidence in service and quality of service, and respectively, the quality of service and the potential intention to use the service. H9: Privacy Security of using smart locker is positively associated with perceived value. H10: Privacy Security of using smart locker is negatively associated with Transaction cost.

## 2.9 Transaction Cost

Transaction costs are the expenses involved with an entity. Economic exchanges which differ independently of the consumer market price of traded products or services Robins (1987). Kuperan et al. (1998) Indicate that the value of thorough understanding of the arrangement of governmental and natural capital to assure that all expenditures are paid for. Ahluwalia et al., (2020) stated that transaction cost measures and compare the benefits of value in sense of consumers to spend or bear cost on the product or not. 'Transactions' and 'costs' are the essence of the philosophy of transaction cost economics. The exchange involves selling of a unit of products or a service, while the expense refers to the amount of the financial and non-economic values associated with the exchange facilitation. The Study of Teo et al., (2004) examined that the acquisition costs of internet purchases for customers are influenced by six factors: product complexity, behavioural uncertainty, ease, economic utility, durability, and precision of properties. The findings reveal that behavioural ambiguity and asset precision are positively linked to the cost of transactions, while ease and economic utility are negatively linked to the cost of transactions between US and Chinese customers. Dependability is adversely connected to the cost of purchases among US consumers, but not among China's customers. Transaction prices are directly linked to the ability of US customers and those in China to shop online. US buyers experience less commodity ambiguity, behavioural uncertainty, precision of properties, durability, and more convenience and economic utility than customers in China. Meanwhile, the findings of Teo (2006) Indicate that the Internet is attracting growing interest from professionals and scholars as a diverse virtual platform for the sale and purchasing of content, services and goods. In this study, we explore the views of online retail adopters and non-adopters in based on socioeconomic profile, e-shop customer preferences, benefits and issues of internet buying and sales expense. Furthermore, the kinds

of goods bought the intensity of internet sales and the level of contact with e-commerce suppliers are also investigated. The results clarify the spending behaviour of customers in the online commerce. However, the study of Schniederjans & Hales (2016) reveal that the handling both social and environmental efficiency has arisen as a core problem for many organisations. In addition, it is more difficult to establish sufficient supply partnerships to align both economic and environmental efficiency measures with emerging global organisations. This study explores how emerging information technologies such as cloud computing can not only help businesses sustain sufficient supply chain coordination, but also maintain both economic and environmental efficiency, focusing on processing cost economics. We also find that teamwork does not inherently impact environmental efficiency, unlike other research, and only partially mediates the correlation among cloud services and economic performance. Furthermore, the findings of our study offer proof of the direct effects on both financial and ecological efficiency of cloud technology. However, Wang & Lee (2017) stated that through source of policy interference, decreasing transaction costs may create competitive advantages and lead to the growth of foreign trade. The study explores the effect of cross-border e-commerce on foreign trade in China in order to resolve this discrepancy, particularly from the point of view of transaction cost economics in accordance with the conventional relative benefit framework, by selectively examining information costs, negotiating costs, shipping costs, tariffs and intermediary costs. The outcome indicates that cross-border e-trade is having a positive impact on China's annual rise in foreign trade. However, the optimistic impact is not evidenced by incremental market growth, likely due to the slow adoption of beneficial trade policies, in addition to the diminishing of global trade.

H11: Transaction Cost of is positively associated with Intention to use smart locker.

## 2.10 Perceived Value

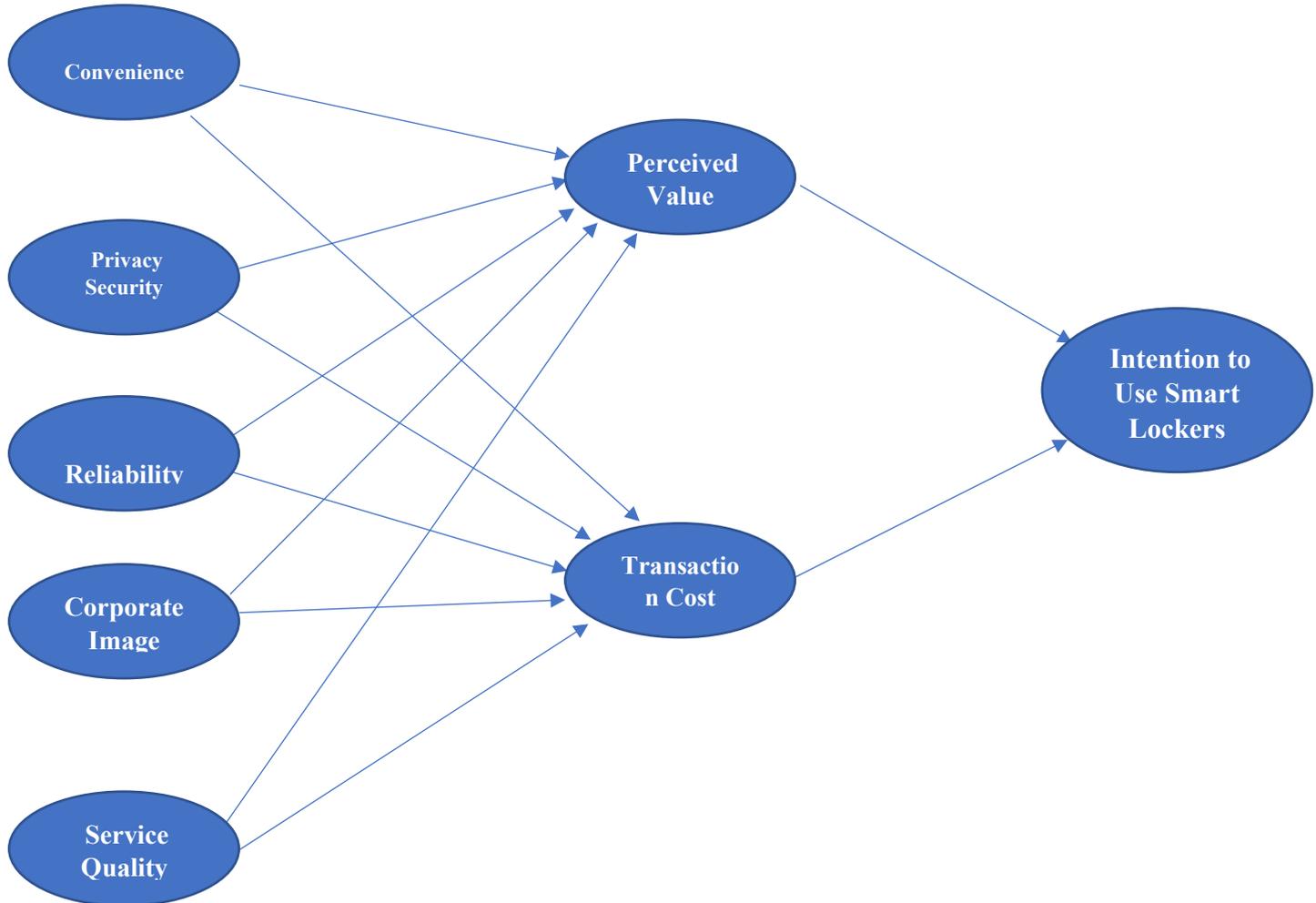
The overarching judgement of the consumer on the usefulness of services or products is focused on expectations of the advantages gained in the trade-off among benefits and costs Zeithaml, V. A. (1988). Perceived value is defined as the capability of the firms to gain the consumer expectations where customers willingness to pay can be enhance. Hallowell (1996) described value as "particularly in comparison to value equal to reliability". Hamari et al., (2020) explore that how the perceived importance of users is correlated with their intention to use freemium offerings and buy subscriptions. First, researcher find support for the "Demand Via Discomfort" theory suggested in this report, suggesting that the greater the freemium service's satisfaction, the lower the plans to buy premium content, but the greater the actual desire to use the service it is has also observed that social importance impacts freemium use and premium sales favourably. Thirdly, while it has a favourable correlation with freemium use the consistency of the freemium experience does not appear to be correlated with premium transactions. Lastly, the economic advantage of freemium content is correlated favourably with the usage of freemium services and therefore has a favourable impact on subscription sales through improved use. The results of the current study illustrate the particularity of the



freemium business model: on the one side, improving the relative utility of the freemium service (i.e. pleasure) will both contribute to and subtract from potential profitability through enhanced loyalty, from the other side, decreased monetization. This finding of Charton-Vachet et al., (2020) demonstrated that the perceived importance of marketplace and the demand of customers for such goods are variables that mediate the relationship between the customer attitude towards a location and their intention to buy regional products. Finally, this analysis would illustrate cognitive (via perceived value) and intuitive (through choice) directions or pathways, from the mindset of consumers towards a region to the purpose of purchasing goods from that region. The study identified their attitude towards the area, their desire for local food products and their desire to repurchase those products, and perhaps even the perceived importance of regional food products. The relative importance of regional goods and the desire of customers for these goods are entirely mediated by the relationship among the perception of customers towards an area and their plan to buy goods from that region. Meanwhile, Calza et al., (2020) findings also examined the relationships between the on-board surroundings, overall happiness, perceived importance and behavioural intentions, and the moderating impact of gender, work status, social context and the tendency to remain on board. The study results indicate that the on-board atmosphere is a reasonable indicator of behavioural intentions, but that happiness and perceived meaning actively mediate the relationship. In addition, the multi-group study of moderating effects revealed different variations that provide important lessons for passenger segmentation; these perspectives have major consequences for future research and cruise ship companies alike.

H12: Perceived value of is positively associated with Intention to use smart locker.

### Theoretical Framework



## Chapter 3. Research Methodology

### 3.1 Research Design

This research to investigate the impacts of intention to use smart lockers. The structure of the research used particular techniques and methods to analyse the data. Same as, (Creswell & Creswell, 2017) stated that research design helps researcher to work on a proper direction which is related to the study title and write a useful research on it. In research design discuss the types of studies. This research is conducted based on instrumental survey from the targeted population to get the responses from it.

### Sample Size

Sample size is basically the total numbers of participants which are participating the results of this research. The sample size is of this research is 380 to get the effective results from the data.

The respondent of the research includes those who use online sources to order goods and parcels on regularly or occasionally.

### 3.9 Data Analysis

this part is the core in whole research to test the gathered data in available tools. In this research author used Smart PLS for data analysis, path analysis conducted to measure the Composite reliability, CFA, Construct reliability, discriminant validity (Bendat & Piersol, 2011). The author used SPSS for descriptive statistics of data.

### Research Instruments

Instruments of this study is adopted and adapted from previous studies. Data has been collected through online questionnaire survey form in google. The questionnaire has been divided in two parts. In first part demographic has been addressed and in second part the variables have been measured using seven points Likert scale whereas, the levels of the scale was 1= Strongly Disagree, 2= Somewhat disagree 3= Disagree, 4= Neutral, 5= Somewhat Agree, 6= Agree, and 7= Strongly Agree.

### Demographic

#### Participants demographic

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Gander</b>	Male	322	85.9	85.9	85.9
	Female	53	14.1	14.1	100.0
<b>Age</b>	21 -30	58	15.5	15.5	15.5
	31 – 40	129	34.4	34.4	49.9
	41 – 50	141	37.6	37.6	87.5
	50 and Above	47	12.5	12.5	100.0
<b>Qualification</b>	Up to Intermediate	93	24.8	24.8	24.8
	Graduation	159	42.4	42.4	67.2
	Master	104	27.7	27.7	94.9
	Doctoral	19	5.1	5.1	100.0
<b>Income of the household</b>	Up to 20000	30	8.0	8.0	8.0
	21,000 - 30,000	114	30.4	30.4	38.4
	31,000 - 40,000	141	37.6	37.6	76.0
	41,000 & Above	90	24.0	24.0	100.0
<b>Material Status</b>	Single	174	46.4	46.4	46.4
	Married	201	53.6	53.6	100.0

### Descriptive Statistics

Factors	Measurements		Descriptive Stats		Confirmatory Factor Analysis		
			Mean	STDEV	Outer loadings	T Statistics	P Values
Corporate Image	1	The Online trading company is very innovative and pioneering	0.706	0.036	0.707	19.470	0.000
	2	The Online trading company is open and always interacts well with customers.	0.761	0.021	0.761	36.262	0.000
	3	The Online trading company has a good reputation since it is always involved in corporate social responsibility (CSR) activities.	0.742	0.030	0.745	24.903	0.000
	4	The Online trading company always shows business ethics.	0.741	0.029	0.739	25.077	0.000
Convenience	5	I feel that smart lockers are located close to my residence or daily activities	0.621	0.066	0.628	9.536	0.000
	6	I feel that smart lockers allocate sufficient time for me to collect my parcels	0.823	0.035	0.826	23.559	0.000
	7	I feel that smart lockers are easy to use	0.863	0.027	0.864	32.158	0.000
Intention to Use Smart Lockers	8	I consider the use of smart lockers to be my first choice for online purchases	0.877	0.016	0.876	53.311	0.000
	9	I would recommend smart lockers to my friends	0.900	0.011	0.900	85.111	0.000
	10	I would say positive things about smart lockers to my friends	0.893	0.014	0.893	64.922	0.000
Privacy Security	11	I feel secure using smart lockers	0.830	0.021	0.830	40.222	0.000
	12	I feel that using smart lockers does not increase the chances that my personal information will be used for other purposes	0.832	0.019	0.833	43.082	0.000
	13	I feel that using smart lockers does not lead to a loss of privacy for me because my personal information would be treated confidentially	0.705	0.039	0.706	18.086	0.000
	14	I feel that using smart lockers does not cause me to lose control over my personal information	0.863	0.018	0.863	47.393	0.000
Reliability	15	I can rely on smart lockers to provide accurate services	0.686	0.037	0.690	18.484	0.000

	<b>16</b>	I can rely on smart lockers to provide error-free services	0.710	0.040	0.712	17.600	<b>0.000</b>
	<b>17</b>	I feel that technology errors caused by smart lockers are rare	0.797	0.019	0.797	42.165	<b>0.000</b>
	<b>18</b>	I feel that smart lockers are more reliable than the people providing delivery services	0.823	0.022	0.822	36.964	<b>0.000</b>
<b>Service Quality</b>	<b>19</b>	The Online trading company provides access to information on products or services offered.	0.630	0.051	0.634	12.349	<b>0.000</b>
	<b>20</b>	The terms and the conditions of the Online tradings are clear and easy to understand.	0.872	0.016	0.871	53.468	<b>0.000</b>
	<b>21</b>	The Online trading company performs the services as promised	0.862	0.016	0.862	55.080	<b>0.000</b>
<b>Transaction Cost</b>	<b>22</b>	I have to make a significant effort to source information on using smart lockers	0.803	0.025	0.804	31.866	<b>0.000</b>
	<b>23</b>	I have to make a significant effort to learn to use smart lockers	0.829	0.025	0.832	33.452	<b>0.000</b>
	<b>24</b>	I have to make a significant effort to physically travel to collect my deliveries from smart lockers	0.821	0.013	0.821	64.270	<b>0.000</b>
<b>Perceived Value</b>	<b>25</b>	I feel that smart locker services are reasonably priced	0.828	0.020	0.828	41.077	<b>0.000</b>
	<b>26</b>	I feel that using smart lockers is pleasant	0.843	0.020	0.845	41.585	<b>0.000</b>
	<b>27</b>	I feel that using smart lockers would have positive effects on the environment and society	0.679	0.054	0.682	12.586	<b>0.000</b>

### Structural Equation Model

Results and discussion part included in three parts. on first part the model fit, validity, reliability of the items assessed. Structural model has discussed in second part. In last part the effects of the direct, indirect, mediating and total effects examined on consumers intention to use smart lockers. Researcher used the structural equation model (SEM) to test the study hypothesis, while the testing was carried out using Smart PLS software. In addition, the test was performed to determine the indirect and direct effects of all the constructs. The use of the (SEM) structural equation model has been found to be a key technique used under numerous regression models and methods (Barron & Kenny, 1986). It is used to establish the systemic relation between exogenous and endogenous influences. Factor analysis and multivariate analysis are used. In comparison, the regression equation attempts to describe each construct in order to determine the relationship of cause and effect, whereas all variables in the causal model must show their

cause and effect at the exact moment. The concept of having this model also means that the bootstrapping approach is used, which is being found appropriate for both large and small sample sizes and does not need any form of indirect effect (Hayes, 2013). To verify both direct and indirect effects, a method described as bootstrapping has been applied (Shrout & Bolger, 2002).

### Factors Significant

The aim of fitness of measurement model is the assess the validity and reliability. Research perform the tests in Smartpls to validate the convergent validity and discriminate validity.

### Confirmatory Factor Analysis

	Corporate Image	Convenience	Intention to Use Smart Lockers	Privacy Security	Reliability	Service Quality	Transaction Cost	Perceived Value
CI_1	0.707							
CI_2	0.761							
CI_3	0.745							
CI_4	0.739							
CVN_1		0.628						
CVN_3		0.826						
CVN_5		0.864						
INT_2			0.876					
INT_3			0.900					
INT_4			0.893					
PVC_1				0.830				
PVC_2				0.833				
PVC_3				0.706				
PVC_4				0.863				
REL_1					0.690			
REL_2					0.712			
REL_3					0.797			
REL_4					0.822			
SQ_1						0.634		
SQ_2						0.871		
SQ_3						0.862		
TCT_1							0.804	
TCT_2							0.832	
TCT_3							0.821	
VAL_1								0.828
VAL_3								0.845
VAL_4								0.682

A basic type of factor analysis is confirmatory factor analysis, mostly frequently examined results in social science (Brown, 2015). It is used to determine how often the measurements of a construct are consistent with an author's understanding of the nature of that definition. The discriminate validity which is showing the differences of construct empirically. Convergent

validity measurements must be greater than all loads of other constructs on the set of requirements, provided that the component loading threshold value is greater than that of other items 0.70 (Hair et al., 2016). Items related to corporate image (CI) loadings four (4) indicators are greater than 0.50 which is making them reliable therefore no values eliminated. In addition, table shows that the three (3) indicators of convenience loadings value also above 0.50 which is showing the reliability of the measurements. Moreover, the tables show the three (3) indicators of intention to use smart lockers (INT) showing the reliability of the values with the greater than 0.5. furthermore, the four (4) indicators of privacy security Loading values greater than 0.5, meaning that the metrics are accurate. The four (4) indicators of reliability loadings are greater than 0.5 which indicated that the values are reliable and no need to eliminate the indicators. Table shows the three (3) indicators of service quality loading values which are also over the 0.5 whereas, there was no need to eradicate the indicators. Moreover, the table show three (3) the indicators of transaction cost loading values are greater than 0.50 that indicates the accuracy of the measurements. The three (3) indicators of the perceived value loading CFA also above 0.5 whereas, the measures did not need to be removed.

### Convergent Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Convenience	0.922	0.949	0.861
Corporate Image	0.723	0.827	0.545
Intention to Use Smart Lockers	0.868	0.919	0.792
Perceived Value	0.695	0.827	0.617
Privacy Security	0.895	0.919	0.739
Reliability	0.753	0.842	0.574
Service Quality	0.713	0.836	0.634
Transaction Cost	0.759	0.859	0.670

The table shows that the CR and AVE of all dimensions are greater than 0.50 which is suggested by (Kline, 2010). Furthermore, the AVE loadings of the construct over the threshold value of 0.50 which indicating the convergent validity (Hair et al., 2010). In above table the AVE values are more than 0.50 through which convergence validity is confirmed according to the values. In at least two tests of a related construct, internal consistency implies the levels of association (Carmines and Zeller, 1979). Tables shows Composite reliability of the items is 0.85 to 0.94 according to (Hair, 2010) the results of CR are acceptable in compare to threshold value of 0.70. table shows that the reliability of construct measurement internal stability. Table also shows the average variance extracted results which is above 0.5 which indicate the convergent validity (Hair et al., 2010). Furthermore, the Cronbach alpha value indicate the result which is more than 0.5 and less than 0.70 whereas, the researcher accepted the value.

### Discriminant Validity

	Convenience	Corporate Image	Intention to Use Smart Lockers	Perceived Value	Privacy Security	Reliability	Service Quality	Transaction Cost
Convenience	0.928							
Corporate Image	0.008	0.738						
Intention to Use Smart Lockers	0.041	0.765	0.890					
Perceived Value	0.060	0.628	0.652	0.786				
Privacy Security	0.905	-0.017	0.033	0.049	0.860			
Reliability	-0.049	0.691	0.749	0.627	-0.040	0.757		
Service Quality	0.012	0.777	0.753	0.709	-0.018	0.669	0.796	
Transaction Cost	0.068	0.735	0.758	0.752	0.066	0.734	0.719	0.819

The purpose of the discriminant validity evaluation is to determine that a reflective measurement items has the closest relationship within PLS path model with its own markers (e.g., in contrast with every other measurement items) (Hair et al., 2016). Fornell and Larcker (1981) stated that perhaps the Average variance extracted square root could be used in each observed variable to determine discriminant validity. The principles of discriminant validity were established by Campbell and Fiske throughout their discussion on assessing test reliability. The value required for discriminant validity is greater than 0.50 in this study table shows the values greater than 0.50 in all indicators. If the value of discriminate less than 0.50 which means, there is high discriminate among the variables.

### R Square

	R Square	R Square Adjusted
Intention to Use Smart Lockers	0.587	0.585
Perceived Value	0.623	0.618
Transaction Cost	0.671	0.666

R square shows the predictability of independent variables on dependent variable. In the above table it is stated that intention to use smart locker 0.58 percent explaining independent variables. Meanwhile the Perceived value is defining the dependent variable intention to use is 0.62 percent variance. the R square of transaction cost also the explaining the dependency of 0.67 percent.

## The structural model (Inner Model) and Hypotheses testing

The dynamic model helps to explain the dynamic interactions of the variables and evaluate them Marko Sarstedt & Jun-Hwa Cheah (2019). The SEM tested and run on the SmartPLS version 3.2.3. The outcome preview is added below, including the description of the findings, after performing the exam.

### Mediating Effects Analysis

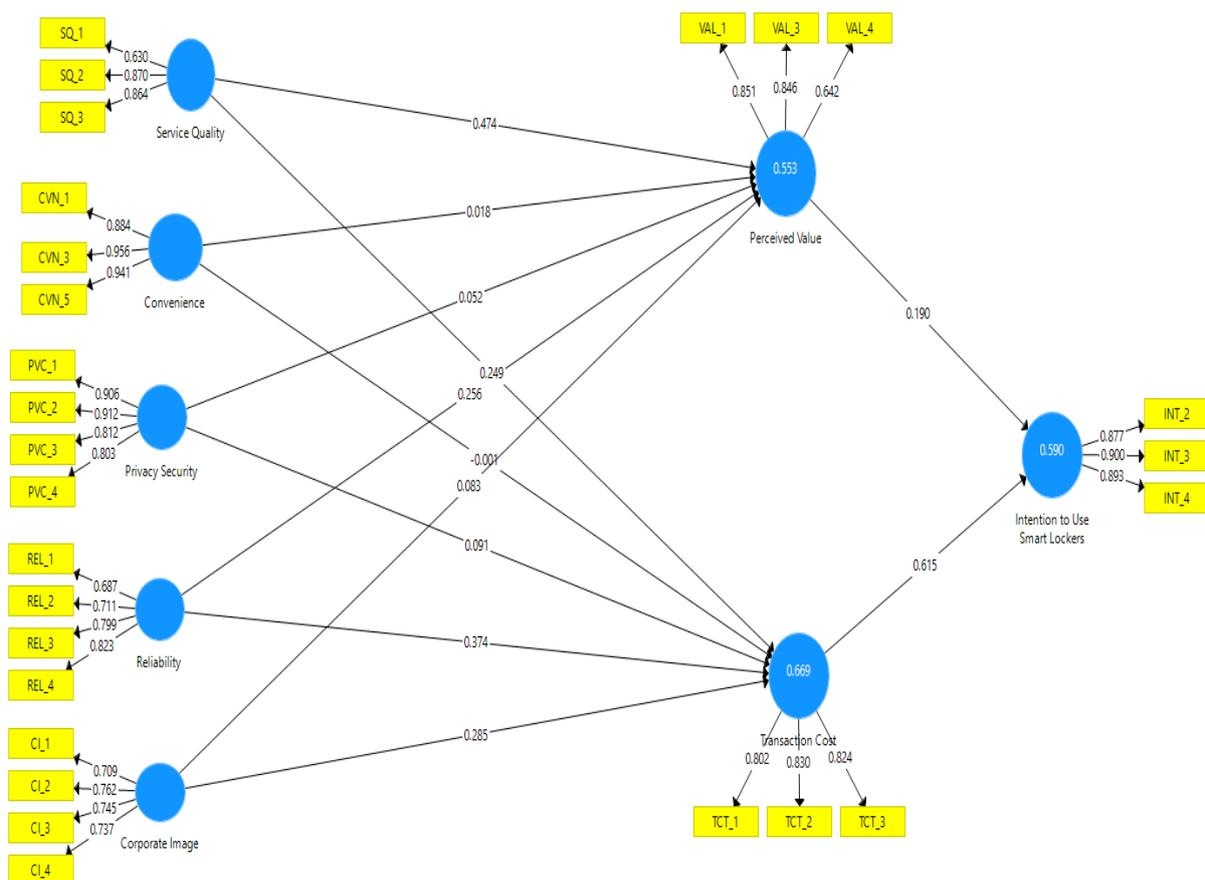
Mediation evaluation is thus used through the participation of a third explanatory mediating factors to test the causal relationships between selected dimensions (Hair et al., 2016). As per the study of Williams, Vandenberg, and Edwards (2009) The impact of intervention or mediation can take place when statistically meaningful is the result of the path between the exogenous variable and the intermediary (named as path A and the path between the intermediary and the endogenous variable (named as path b). In consideration of the express purpose of making no statement regarding the sampling division of data, the method of bootstrapping is suitable for intervention examination and can be extended to small sample sizes (Hair et al., 2016). The initial step is to determine the direct or immediate influence of independent parameters on the latent variable, which may be relevant if the moderator is not included in the mediation analysis (Zhao, Lynch & Chen,2010).

Structural Path Coefficient	T Statistics ( O/STDEV )	P Values
H1: Convenience -> Perceived Value	6.915	0
H2: Convenience -> Transaction Cost	2.644	0.008
H3: Reliability -> Perceived Value	0.539	0.59
H4: Reliability -> Transaction Cost	4.539	0
H5: Corporate Image -> Perceived Value	1.534	0.126
H6: Corporate Image -> Transaction Cost	4.704	0
H7: Service Quality -> Perceived Value	6.163	0
H8: Service Quality -> Transaction Cost	3.686	0
H9: Privacy Security -> Perceived Value	8.844	0
H10: Privacy Security -> Transaction Cost	3.053	0.002
H11: Transaction Cost -> Intention to Use Smart Lockers	13.878	0
H12: Perceived Value -> Intention to Use Smart Lockers	4.105	0

In Above table the results of mediating and specific indirect effects are showing the significance except corporate image > perceived value and reliability > perceived value showing the insignificance relationship between the factors as a mediator. It has shown in the structural part table that there is an impact of determinants of customers' intention to use smart

lockers for last-mile deliveries. However, it has shown that the from 12 of 10 variables are accepted. Convenience has a strong relationship with perceived value and transaction cost. Corporate image has negative relation with perceived value and has positive relation with transaction cost. Privacy security has positive relationship with perceived value and transaction cost. Reliability has negative relation with perceived value and positive relation with transaction cost. Service quality has strong relation with perceived value and transaction cost. Moreover, perceived value and transaction cost has a strong relation with Intention to Use Smart Lockers.

### SmartPLS loadings



## 6. Discussion and Conclusion

Demand for last-mile transport in metropolitan areas is expected to rise by 81 percent by 2030 according to the World Economic Forum (2020), increasing in 36 percent more distribution vehicles in nearly 1132, 100 cities worldwide. The study done in Pakistan reported that people believe that smart lockers are placed near to the home or everyday activities. The Mehmood & Najmi (2017) revealed that customer loyalty is not impaired by proximity to facilities providers because they see internet sales as an essential online store on which they can carry out the

shopping process under their own. It is recommended that e-stores should focus on the availability of convenience services in order to boost customer satisfaction. In addition, the results indicate that the simplicity affects the intention of consumers in online sales and market figures have important effects. The research by Kumar et al. (2020) confirmed that given that convenience is one of the major factors for the user to embrace internet shopping, it is important to obtain an understanding of the aspects of convenience for internet transactions and their effects on the purpose of perception and prolongation. It was discovered that using smart lockers via the online survey would not raise the likelihood that personal knowledge could be used for other purposes. The use of smart lockers would not lead to a lack of privacy for persons when sensitive information is handled confidentially. The result is linked to the Soodan & Rana (2020) study that, compared to the fear of losing personal details, consumer privacy concerns have a greater effect on the output of intent. Nevertheless, consumers from all parts of communities and life cycle phases were equipped to use cloud computing facilities via mobiles with major security breaches in the face of need at the time of the demonetization act enacted in the period, and now a main priority, automatic encryption and privacy can serve as a strong consumer incentive.

Making significant effort to physically travel to collect deliveries from smart lockers are rare and flexible. The survey also found that people have to make a significant effort to source information on using smart lockers. Meanwhile, the study of Teo (2006) also confirmed that (TCT) Premised on socio-economic category, e-business consumer habits, incentives and internet purchase and sales cost problems, online shopping purchasers and non-adopters. In addition, the kinds of products purchased are often analysed by the intensity of online purchases and the extent of interaction with e-trade suppliers. The findings explain the purchasing pattern of buyers in the online trade. The conclusions of the study by Zhang et al., (2020) revealed that Customers are hesitant, largely because of security issues, to implement smart lock systems. Getting better parcel details, restricting delivery availability and increasing technical support are proposed solutions to mitigate the hurdles. Besides, the survey has also confirmed that the utilisation of smart lockers is considered the first decision for internet transactions. This study also revealed that recommendation of smart locker to other people and intention to use of it also a positive thing about smart lockers in internet transactions. The findings Rai et al., (2019) also indicates that 31 controlling factors have a substantial influence on the behaviour of smart service consumers in terms of adoption, usage, and consistency. Furthermore, the interaction between consumer attitudes and factors such as external presence has a moderating impact on study classes. The consequences of shaping factors have been explained by this study and one delegate just has that reference value for optimising the purpose to use and the engagement of consumers of smart networks and applications. The survey also confirmed that use of smart lockers to collect parcels is efficient and effective way to provide consumers a comfort. The responses revealed that the Smart lockers have positive effects on the environment and society. The findings of Charton-Vachet et al., (2020) also confirmed that the general significance of regional products and the demand of consumers for those goods are wholly influenced by the

association between consumers' impressions of an area and their intentions to purchase goods from that region.

This study has conducted base on the three different theories (behavioural economics, motivation theory and customer utility theory). The central objective of this study to identify the customer intention to accept the technology and to gain the benefits of receiving parcels at comfort zone. The author has discussed the scope and concept of the determinants of customers' intention to use smart lockers for last-mile deliveries in Pakistan. The smart lockers in online trading for parcel delivery has significant relationship with consumers intention to use it. Consumers' satisfaction has based on the comfort sources through which customers getting product at the last stage. However, getting product at convenience enhance the attitude of consumers to use digital sources to collect their products. The research explored different methods that will help enterprises that are struggling hard to produce their items, as well as demonstrating certain tactics and approaches to deliver goods when the buyer is not present at the site. Its tactics will compel a buyer to purchase the commodity from the same services later in the future. Furthermore, it has concluded that the Over the last four years, e-traded transactions have exceeded US\$2.4 trillion. By 2021, e-commerce transactions had reached approximately US\$6.5. This has therefore boosted the last-mile delivery market, which has been explained as the final stage of commerce in the fulfilment of consumer packages where the customers receive or receives the delivery at home through a particular geographical location. In practice, the last-mile package efficient strategy is necessary since this point accountable for about 70% of transporter costs reduce point shipping expenditures, carriers are launched in comfortable points. Most of the locations in the means of sending products to consumers had significant changes over the period and were treated efficiently and effectively, such as distributing materials to a particular fulfillment center via carriage places or to a dock with a cargo box. However, the final method of fulfilling orders to the locations of customers is generally not very fruitful, as is the complicated and expensive and regulatory congesting aspect, containing 29 percent of the costly shipping spending plan.

It has concluded that the digital companies provide significant exposure and full knowledge of goods and services indicate that consumer satisfaction has a significant influence on the ability of consumers to use smart lockers with as a whole last mile delivery. The study also concluded that individuals had to make a considerable effort to collect data on the usage of smart lockers. It is uncommon and agile to make substantial attempts to drive manually to receive deliveries from smart lockers. The study also concluded that individuals had to make a considerable effort to collect data on the usage of smart lockers. The findings of the research have their importance for the distributor firms of the Pakistan as it is examined that the availability of the good at the point of convenience enhance and encourage the consumers to purchase and get parcels at near available collections points of their residence. The firms of the Pakistan parcel distributors and online businesses must implement the smart lockers strategy to gain the market competitive advantage. Since the online trading has increased and many of



superstores shifted towards the digital platform with the backbone of distribution where giving consumers a reliable and convenience source of receiving goods also a challenge for the firms. Where through this study it is concluded that the source of smart lockers can provide the expectations and association of using online orders to process and get their parcels at the near location as well as on available time.

### **7.1 Future Research and limitations**

Although the achievements of this study, there are also some limitations. First constrained was time frame was short to complete this study for gathering the data from the large sample size. Dimensions used for this study were not much to cover to the intention to use of technology which should be increased. This study was conducted only in densely populated area Karachi, Pakistan due to limited resources. Researcher should increase the sample size with including targeted populations of other metropolitan areas of Pakistan. People of Pakistan are not so much aware of technology and stressed about receiving their importance documents through delivery services. However, research should consider other carrier services through which important documents deliver to specific points and tracking of those documents also increase the worth of study on this sector.

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