The effect of logistics and policy service quality on customer trust, satisfaction, and loyalty in quick commerce: A multigroup analysis of generation Y and generation Z

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A B S T R A C T

This study investigated the effect of logistics and policy service quality on customer trust, satisfaction, and loyalty within the quick commerce landscape in Jordan, with a particular focus on generational differences between generation Y (Gen Y) and generation Z (Gen Z) users. A survey of 719 active Q-commerce users revealed that logistics service quality (personal contact quality, shipment condition, product availability, timely product delivery, and order accuracy) significantly affected customer satisfaction, with order accuracy being the most impactful factor. Additionally, both cash on delivery and order discrepancy handling significantly affected customer trust. Finally, customer satisfaction and trust affected customer loyalty, though in multigroup analysis, their relative importance varies between generations. Gen Z prioritizes speed of delivery and less concern on personal contact with delivery personnel. On the other hand, Gen Y values product availability and cash on delivery more than the younger generation. These findings offer valuable insights for Q-commerce platforms to tailor their strategies to the distinct priorities of each generation and enhance customer trust, satisfaction, and loyalty.

1. Introduction

E-commerce has witnessed significant growth in recent years, and further accelerated by the COVID-19 pandemic which changed how we live (Yang et al., 2024; Al-Adwan & Yaseen, 2023). The pandemic's lockdowns and the subsequent need for social distancing catalyzed a shift towards online grocery shopping (Delberghe & Läubli, 2022; Dannenberg et al., 2020; Al-Adwan et al., 2022). There's been an increasing consumer demand for faster order fulfillment leading to the dawn of a new retail format known as quick commerce. As it distinguishes itself from regular e-commerce by offering super-fast delivery times, usually between 15 to 60 minutes. Dark stores facilitate this speedy service (Yang et al., 2024). In 2020, retailers saw a huge boost in grocery sales through Q-commerce when they started delivering products within half an hour. Q-commerce distinguished itself from regular e-commerce by emphasizing speedy and efficient delivery, leveraging advanced technology and logistics systems to ensure rapid product delivery, highlighting the importance of dark stores and automated warehouses for seamless and frictionless customer experiences (Al-Adwan et al., 2019; Gund & Daniel, 2023).

Looking ahead, e-commerce, including quick commerce, is expected to capture an increasing share of retail purchases, with projections indicating that 20.1% of retail transactions will occur online by 2024. The overall e-commerce market is also expected to exceed $6.3 trillion in 2024 and expects to grow to reach 7.9 by 2027 (Snyder, 2024). The quick commerce segment is forecasted to expand from $25 billion in 2021 to $72 billion by 2025, underlining its rapid growth and the evolving

consumer preferences for faster delivery services (Bommireddipalli, 2022). This demand for speed necessitates a transformation in logistics, with warehouses evolving into dark stores that integrate all aspects of the delivery process, from packaging to shipping, to meet the quick turnaround times (Kawa, 2021). Dark stores near busy areas help make the pickup and delivery process swift (Luhukay et al., 2023). Instant access has become the norm for most services thanks to on-demand platforms like Uber Eats — so it only makes sense that groceries would follow suit (Uzir et al., 2021; Miao et al., 2022). This model was particularly popular after COVID-19 hit, signaling a shift in consumer habits toward speed (Uzir et al., 2021; Miao et al., 2022). Micro warehouses or dark stores in city centers allow for quick processing and delivery from Q-commerce providers, adding extra value to their brand. And with constant convenience and access to products at any time of day, these companies could end up boosting their profit margins as well as customer satisfaction (Kumar & Chidambara, 2022; Kapoor et al., 2023).

Jordan's Information Communications and Technology (ICT) sector is growing at an alarming rate — but in a good way. The government is putting money into this sector and expects annual revenues to surpass $3.3 billion. Ultimately, Jordan wants to be known as a digital hub for its region (Trade, 2024). Thanks to all that growth in ICT though, e-commerce has been able to shine over other sectors that are struggling in developing countries of the Arab world and Middle East (Al-Adwan & Kokash, 2019). However, fear still exists in the system. Skepticism toward e-commerce is holding back Jordan's ability to thrive in this sector (Hamad et al., 2018). Moreover, with risk management being a critical area of concern, focused attention to safeguard against potential threats (Al-Adwan & Kokash, 2019; Alshweesh & Bandi, 2022; Almahameed et al., 2019).

Logistics service quality is fundamental for customer adoption behavior, willingness, and willingness-behavior consistency (Li et al., 2020). The quality of logistics services not only impacts customer satisfaction but also influences the overall quality of products in e-commerce transactions, particularly in fresh food e-commerce (Shan et al., 2021). Evaluations of logistics service quality often center around customer satisfaction, reflecting a customer-centric approach to assessing service quality (Jiang et al., 2019). Furthermore, Al-Adwan et al. (2022) emphasize policy service quality, particularly cash on delivery options and lenient return policies, as crucial for attracting online buyers in Jordan. However, due to differences in order value between quick commerce and regular e-commerce, the quick commerce platforms usually don't return the order as it is not feasible if an order discrepancy happens. Thus, they have mechanisms to mitigate the issue with different strategies such as giving money back to the customer wallet. These elements play a significant role in enhancing customer trust and purchase decisions, with return policy leniency not only boosting trust and sales but also fostering customer loyalty (Nisa & Hutagalung, 2022; Raman, 2019; Ketzenberg et al., 2020). Similarly, offering a cash on delivery payment option alleviates concerns about online fraud, thereby establishing trust among customers, especially in regions with prevalent online security concerns (Abraham et al., 2021). Customer trust is clearly identified as a keystone for the success of e-commerce, directly influencing customer loyalty. Many studies conclude that trust creates a safe environment for e-commerce. Without it, customers are less likely to participate and trust the process of online transactions (Kristanto et al., 2022; Fan et al., 2022; Ismunandar & Mulyadin, 2018). Others (Al-Adwan, 2019; Al-Tit, 2020) stress how important trust is when predicting customer loyalty.

Gen Z and Millennials have been instrumental in the e-grocery market. They've transformed the field through their digital skills and early adoption of online shopping (Chang & Chen, 2022). While both generations are known for being tech-savvy, Gen Z has something different about them as they were born between 1997- 2012 (Koch et al., 2020; Sawaftah et al., 2021; Król & Hernik, 2020; Bae & Han, 2020). Having been practically born with technology and the internet, it's safe to say that Gen Z is far more comfortable with tech than Gen Y (1980-1996) who had to adapt over time (Król & Hernik, 2020; Bae & Han, 2020). The difference in exposure and experience between these two groups has impacted their consumption habits, communication preferences, and work behavior which sets them apart when working in the digital landscape (Król & Hernik, 2020; Bae & Han, 2020; Panagiotou et al., 2022; Uysal, 2022). Both generations have played a huge role in driving the demand for e-groceries. Demand is driven by a desire for things to be easy and fast (Šarkovská & Chytkova, 2019). Online grocery shopping has seen exponential growth because of this mentality as well as Covid-19 showing people how accessible and safe online groceries can be (Bauerová, 2021).

This generational shift underscores a transformative period in consumer behavior towards online retail, emphasizing the growing reliance on e-commerce solutions for grocery shopping. Quick commerce (Q-commerce) is becoming a key issue in the logistics industry because of increasing competition to deliver faster (Lee et al., 2023). However, as Q-commerce is quite new, there's a noticeable gap in academic research on this topic (Gund & Daniel, 2023; Rai et al., 2023). Most studies to date focus on either general overview of quick commerce or from an organizational perspective. For instance, research dives into optimizing Micro Fulfillment Center locations (Lee et al., 2023), and formulating strategic network problems for quick commerce retailers (Yang et al., 2024). Assessing the maturity of app development for q-commerce platforms (Heruatmadja et al., 2023). Product recommendation systems for new users in q-commerce (Chawla et al., 2024). Additionally, studies also consider the urban implications and geographical dimensions of quick commerce, characterizing pure e-commerce forms in urban areas (Prumbaum & Rohde, 2023), and analyzing the nuisances caused by quick commerce in urban settings (Rai et al., 2023).

While other studies offer a comprehensive view of the quick commerce industry, discussing its evolution, dynamics, and overarching trends. Such as examination of the digital transformation within the retail sector (Zhang & Hänninen, 2022) and the analysis of industry imperatives and growth drivers (Sanghi et al., 2023; Stojanov, 2022). Nonetheless, few studies have taken the customer point of view, some studies looked at the relationship between quick commerce service experiences, trust,

and customer loyalty (Kapoor et al., 2023), the perceived value of green initiatives by q-commerce on consumer brand engagement (Lavuri et al., 2024), and factors influencing usage intention (Luhukay et al., 2023; Deepthi & Bansal, 2023).

This study will be among the leading studies that integrated logistics service quality and policy service quality to examine their impact on customer trust and satisfaction, which serve as antecedents to customer loyalty. Furthermore, to the researcher's knowledge, no study takes a comparison multi group analysis for the generation z and y regarding their experience with quick commerce. To fill the literature gap, we try to answer the following research questions: (1) what is the effect of logistics service quality in terms of -personal contact quality, shipment condition, product availability, timely product delivery, and order accuracy- on customer satisfaction? (2) How does policy service quality, specifically regarding cash-on-delivery and order discrepancy handling, impact customer trust? (3) What is the effect of customer satisfaction and customer trust on customer loyalty within quick commerce applications? (4) Are there any differences between Generations Y and Generation Z in how these factors relate to each other?
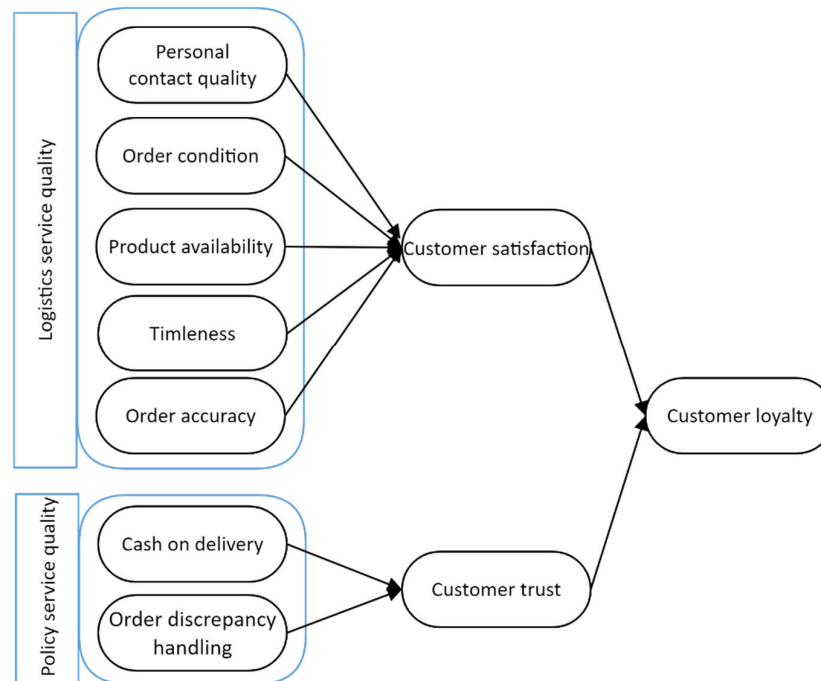

Fig. 1. Research model

2. Literature review and hypotheses development

2.1 Customer loyalty

Customer loyalty is the consistent choice of a specific product or service by a customer, leading to repetitive purchasing from the same brand, regardless of external influences or marketing efforts (Al-Adwan & Al-Horani, 2019; Choi & Mai, 2018; Phạm et al., 2018). This commitment is often indicated by the intention to repurchase and recommend products or services to others (Al-Adwan et al., 2020; Raza et al., 2020). Loyalty relies on trust and satisfaction, which are extremely important to customers. There is a strong connection between customer satisfaction and loyalty (Al-Adwan, 2019; Jasin & Firmansyah, 2023). Trust is essential for creating a strong bond between the buyer and the brand, which can influence customer loyalty (Lin & Chang, 2020). And it is the key to success for many businesses, that it might just be the thing that keeps them going (Aslam et al., 2019; Haque & Mazumder, 2020). The way to win customers over and build trust is by delivering on their expectations. That is vital when it comes to online shopping (Ebrahimi et al., 2019; Koay et al., 2022). In e-loyalty, e-services are positioned with the aim to correlate positively with repurchase intention, indicating the importance of customer intention to repurchase online (Kim, 2018). It is recommended that a partnership between commitment-trust theory and models of e-service quality should be formed to cultivate customer loyalty in online shopping (Goutam & Gopalakrishna, 2018). Khan (2023) states that understanding the complicated relationship between trust and e-commerce is vital for any business looking to build customer loyalty and engagement.

To foster loyalty, it is imperative for businesses to improve customer satisfaction. In doing so they will also gain insight into how much value customers hold onto as well as how many positive word-of-mouth responses they generate (Akıl & Ungan, 2021). The construction and enhancement of customer loyalty are investigated using e-recovery mechanisms and e-service quality in online shopping (Shafiee & Bazargan, 2018). Service Quality has been proven over-and-over again in many contexts

including logistics services to be the main driver behind customer satisfaction alongside positive word-of-mouth intentions (Kolondam et al., 2023; Leppäniemi et al., 2016; Sutrisno et al., 2019).

2.2 Personal contact quality

Personal contact quality refers to the delivery person interacting with the customer when they make a delivery. It involves being attentive, polite, and trying to connect with them at that moment. Many studies have found that this has a big impact on customer satisfaction. For example, Gizaw et al. (2021) showed that high-quality personal interactions between healthcare providers and the Ethiopian pharmaceutical supply agency directly influence satisfaction levels with their services. Similarly, in cross-border e-commerce, Zhang et al. (2023) identify a direct linear relationship between personal contact quality and customer satisfaction, suggesting that even in the digitized realm of commerce, the human element remains crucial. Furthermore, Jiang et al. (2021) in fresh food e-commerce and Masorgo et al. (2023) in last-mile delivery services found similar results: better personal interactions improve customer satisfaction and loyalty across different industries.

H$_1$: *Personal contact quality influences customer satisfaction in quick commerce.*

2.3 Order conditions

Order conditions refer to the state and package's quality of an order upon delivery, which means they need to be in perfect condition, without any damage, and meet the customer's expectations. Research from multiple studies indicates that shipment conditions are a determining factor of customer satisfaction with e-commerce logistics. Lestari and Ganawati (2023) argued it's very important to handle order discrepancies effectively if you want a happy customer, but they did not find direct impact of order accuracy and order on satisfaction, but how these discrepancies are addressed will affect customer satisfaction and loyalty. Jiang et al. (2020) also found that in fresh food e-commerce logistics personal contact, timeliness, and empathy were much more important than delivery and information quality on their own. This emphasizes how last-mile logistics services play a huge role in enhancing service quality and customer satisfaction. On the contrary, Sutrisno et al. (2021), and Vasić et al. (2020) all contracted with the previously mentioned findings. They all share how optimal shipment conditions are necessary for fostering customer satisfaction and loyalty by shaping customer perceptions throughout their experience. In their study of Jordanian e-commerce Al-Adwan et al. (2021) concluded that there may be some cultural differences when it comes to the importance of shipment conditions on customer satisfaction.

H$_2$: *Order conditions influence customer satisfaction in quick commerce.*

2.4 Product availability

Product availability refers to the ability of a retailer to offer what a customer wants, both in terms of having adequate stock for desired items and offering a wide selection. Gizaw et al. (2021) found that there is a direct correlation between product availability and customer satisfaction in healthcare facilities' pharmaceutical logistics. Kolondam et al. (2023) also confirmed the critical role of product availability in e-grocery settings, showing how ensuring that products are always available not only boosts customer satisfaction but also fosters repurchase intentions and encourages positive word-of-mouth — directly contributing to the business's success. Furthermore, Al-Adwan et al. (2022) suggest a relationship between the range of products offered by an e-retailer and the satisfaction of Jordanian consumers who shop online. This suggests that the bigger the selection, the more satisfied customers will be.

H$_3$: *Product availability influences customer satisfaction in quick commerce.*

2.5 Timeliness

Timeliness refers to how long it takes for a retailer to deliver an order to a customer after they have placed it — usually within 30 minutes or so in quick commerce. It's all about meeting delivery windows promised beforehand. Timely delivery has been proven to be one of the most important factors when it comes to customer satisfaction across different kinds of services within e-commerce logistics (Zhang et al., 2024; Al-Shaikh & Khanfar, 2023). Jiang et al. (2021) explored fresh food e-commerce logistics, finding that time in the delivery process is key for maintaining product quality and freshness. Sutrisno et al. (2019) found similar results as time's delivery affects customer satisfaction in logistics companies. Gizaw et al., (2021) in pharmaceutical supply services found that timeliness, product availability and order accuracy are all key factors that influence customer satisfaction.

H$_4$: *Timeliness influences customer satisfaction in quick commerce.*

2.6   Order accuracy

Order accuracy refers to how fulfilled orders match the specific requests or requirements set by the customer. Chaisaengduean (2019) and Akıl and Ungan (2021) have shown that this factor is crucial in nurturing customer loyalty within the context of e-commerce logistics. These findings are mirrored by Prasetyo et al. (2021) who found through structural equation modeling that order accuracy played a critical role in satisfying customers in fast-food chains; leading to loyal customers who will want to repurchase their products.

Shahril et al. (2021) put an emphasis on order accuracy as well when discussing self-serve kiosks in restaurants, attributing it with speed and convenience as essentials for customer satisfaction. In a study about pharmaceutical logistics Gizaw et al. (2021) and Al-Adwan et al. (2022) presented that having products delivered accurately and timely goes hand-in-hand with customer satisfaction which directly impacts how often they repurchase items in the future.

H5: *Order accuracy influences customer satisfaction in quick commerce.*

2.7   Cash on delivery

Cash on Delivery (COD) refers to a payment method where the customer pays cash for the order at the time of delivery. Cash on Delivery (COD) is a widely used payment method in e-commerce. Jana (2017) suggests that the ease and flexibility of COD as a payment option can significantly shape customer loyalty in the e-commerce sector. Sutia et al., (2020) have indicated that trust in e-payments is closely associated with consumer satisfaction and is affected by factors like information security and data privacy. In cultures with high uncertainty avoidance like Jordan, COD increased customer trust in e-commerce (Al-Adwan et al., 2022). Trust in payment methods likely plays a pivotal role in establishing and maintaining customer relationships in such environments.

H6: *Cash on delivery has an effect customer trust in quick commerce.*

2.8   Order discrepancy handling

Order discrepancy handling refers to how effectively a company addresses inconsistencies in order fulfillment, such as incorrect or damaged products. Sutrisno et al. (2019) found that efficient order discrepancy handling in a logistics company positively trusts. Masudin et al. (2020) demonstrated that in the Indonesian halal meat supply chain, efficient handling of order discrepancies contributed to increased customer satisfaction and trust. Furthermore, Javed & Wu (2020) highlighted the mediating role of customer satisfaction and trust in post-delivery services, including order discrepancy resolution, on repurchase intention in e-commerce.

H7. *Order discrepancy handling influences customer trust in quick commerce.*

2.9   Customer satisfaction

Customer satisfaction plays a crucial role in driving loyalty in e-commerce. Ak1l and Ungan (2021) demonstrate a positive relationship between satisfaction and loyalty in the context of e-commerce logistics, suggesting that efficient and reliable delivery services foster customer retention. Similarly, Al-Adwan et al. (2022) confirm the positive impact of satisfaction on both repurchase and word-of-mouth intentions. Also, Koay et al. (2022) highlights the predictive power of customer satisfaction for loyalty in online food delivery, where positive experiences lead to repeat usage and recommendations. Kolondam et al. (2023) echo this finding in the e-grocery industry, showing that satisfaction with both shopping value and e-service quality translates into repurchase intentions and positive e-WOM. Further, Leppäniemi et al. (2016) argued that satisfied customers are more likely to share data, strengthening their bond with the company and ultimately leading to loyalty. Rachbini et al. (2019) reinforce the importance of satisfaction alongside brand equity and value equity in driving customer loyalty.

H8: *Customer satisfaction influences customer loyalty in quick commerce.*

2.10 Customer trust

Trust plays a pivotal role in fostering customer loyalty across many e-commerce contexts. Feroza et al. (2018) found significant influence on e-loyalty in online shopping. Goutam and Gopalakrishna (2018) also found in Indian online shopping that e-trust significantly impacts both commitment and cognitive loyalty. Additionally, Khan and Mohamadali (2023) provide a broader perspective, emphasizing the universal importance of trust in shaping purchase intentions and behavior across various e-commerce contexts. Also, the same results have been confirmed by (Kurniadi & Rana, 2023).

H9. *Customer trust influences customer loyalty in quick commerce.*

3. Methodology

Statista reports that the grocery delivery industry in Jordan is about to go through a huge growth spurt. It is expected to make $564 million in revenue by 2024 (with an estimated Compound Annual Growth Rate of 17.85% from 2024-2029), and to continue growing until it gets to a market volume of $1,282 million by 2029. The number of users for this service is projected to hit 1.5 million by then as well, meaning there is going to be a lot more people wanting groceries brought right to their doorsteps. The user penetration rate will be around 9.7% in 2024, indicating plenty of room for additional customers as they get familiar with online grocery shopping.

3.1 Sampling and screening

The researchers used a snowball sampling technique as it was a feasible method to reach out to the intended sample. It was a perfect approach for targeting Generation Y and Z individuals who actively use quick commerce applications. We identified initial respondents that met our criteria, then asked them for additional referrals. This was done to create a "snowball effect". The method helped put together a diverse group of participants that were relevant to the study's target demographic. To ensure the data was highly relevant and valid, we used a screening question at the beginning of the survey: "Have you ordered from a quick commerce application like Talabat Mart in the past three months?" By doing this it ensured that respondents not engaged with quick commerce platforms were filtered out.

3.2 Data Collection and Analysis

When applying the screening question, 719 valid responses were collected from both gen Y and Z customers who confirmed their recent activity on specified quick commerce platforms. It took three months (Jan – March 2024) for this process to be completed. Once collected, these responses were then analyzed.

3.3 Questionnaire design

The questionnaire had two main parts: demographics and main questions. The idea behind this design is that it will help collect extensive data on Generations Y and Z interactions and preferences regarding quick commerce applications. The demographic part served two purposes: first off it got essential demographic info which confirmed if respondents aligned with Gen Y and Z thus ensuring that correct age groups were targeted in the study. Secondly, it included one screening question which disqualified those who hadn't made any purchase from quick commerce Apps; resulting in only active users contributing with their data - an extremely crucial step in ensuring high relevancy of the collected data. The second part had 37 close-ended questions to measure the research model (Fig. 1) using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". Measurement items for each construct were selected and modified based on empirical articles from e-commerce literature.

3.4 Language Adaptation

To account for linguistic diversity within the target population, the questionnaire was made available in two versions: English and Arabic. This ensured comprehensive accessibility and comprehension so respondents could use the language they feel most comfortable in when time came down to providing accurate and thoughtful answers.

3.5 Validity and Pilot Testing

Both content and face validity were applied for the questionnaire. A panel of academics reviewed the content, then 10 different participants from both generations (Z and Y) familiar with quick commerce applications were asked to complete a paper-based version of it to give assessment on readability and clarity. Their feedback was instrumental in refining the questionnaire, making it as clear as possible to the intended respondents.

A pilot survey was subsequently conducted to test the questionnaire's effectiveness, using Smart-PLS software, yielding 66 valid responses. The analysis of these responses confirmed the reliability and validity of the constructs, with Average Variance Explained (AVE) values surpassing the 0.5 threshold and both Cronbach's alpha and composite reliability indices exceeding 0.7. These results indicated a high level of internal consistency and reliability in the measurement items, affirming the questionnaire's readiness for the broader study.

3.6 Respondents' profile

As shown in Table 1. Females constitute only a slight majority at 52.7%, while males make up the remaining 47.3%. The age groups are made up mostly of Gen Z (57.3%) over Gen Y (42.7%), indicating that the participant pool is younger than it is older. A pretty large number of the respondents in the workforce (59.9%), while students account for 29.5% and the not employed category takes up just 10.6%. As far as grocery shopping from quick commerce platforms go, buying twice a month is what most people do (36.9%), followed by once a week (30.9%), and then once a month (27.1%). Only 5.2% buy less than once a month.

Table 1
Sample's profile

		Frequency	%
Gender	Male	340	47.3%
	Female	379	52.7%
Age group	Gen Z	412	57.3%
	Gen Y	307	42.7%
Job	Student	212	29.5%
	Employed	431	59.9%
	Not employed	76	10.6%
Buying groceries from quick commerce			
	Once a week	222	30.9%
	Twice a month	265	36.9%
	Once a month	195	27.1%
	Less than once a month	37	5.2%

4. Analysis

4.1 Measurement model

Hair et al. (2019) suggest that measurement models should be assessed using a set of accepted criteria which include checking item loadings ; verifying internal consistency and reliability through Cronbach's alpha (a) and Composite Reliability (CR); plus the examination of convergent validity via Average Variance Extracted (AVE) . The cutoff criteria for confirming the validity are Loadings must exceed 0.70, CR values must be above 0.70, and AVE values must surpass 0.50. Fortunately, as we see in Table 2, this study passes all the necessary benchmarks for measurement models except for two items (Disc4 and Loyl5) where their item loading was below 0.7. thus, were deleted from further analysis.

Table 2
Reliability and validity

		Gen Z				Gen Y				Complete			
		Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE
Personal contact quality	Per1	0.834				0.852				0.842			
	Per2	0.870	0.832	0.899	0.748	0.865	0.827	0.897	0.743	0.867	0.830	0.898	0.746
	Per3	0.889				0.869				0.881			
Order condition	Cond1	0.865				0.877				0.871			
	Cond2	0.891	0.837	0.902	0.755	0.881	0.843	0.905	0.761	0.887	0.840	0.904	0.758
	Cond3	0.850				0.859				0.853			
Product availability	Avai1	0.861				0.877				0.868			
	Avai2	0.866	0.831	0.899	0.747	0.879	0.848	0.908	0.766	0.872	0.838	0.902	0.755
	Avai3	0.866				0.870				0.867			
Timeliness	Time1	0.866				0.852				0.860			
	Time2	0.847	0.821	0.893	0.736	0.874	0.839	0.903	0.756	0.859	0.829	0.898	0.745
	Time3	0.861				0.882				0.870			
Order accuracy	Accu1	0.842				0.866				0.853			
	Accu2	0.877	0.829	0.897	0.744	0.880	0.839	0.903	0.756	0.877	0.833	0.899	0.749
	Accu3	0.869				0.863				0.866			
Cash on delivery	COD1	0.854				0.842				0.849			
	COD2	0.857	0.874	0.914	0.726	0.841	0.870	0.911	0.719	0.851	0.873	0.913	0.725
	COD3	0.840				0.848				0.845			
	COD4	0.857				0.861				0.859			
Order discrepancy handling	Disc1	0.836				0.840				0.838			
	Disc2	0.839				0.820				0.831			
	Disc3	0.846	0.868	0.910	0.716	0.816	0.848	0.898	0.688	0.834	0.860	0.905	0.705
	Disc4	*Deleted*				*Deleted*				*Deleted*			
	Disc5	0.863				0.840				0.854			
Customer satisfaction	Sat1	0.827				0.860				0.840			
	Sat2	0.872	0.860	0.905	0.704	0.859	0.893	0.926	0.758	0.866	0.874	0.914	0.726
	Sat3	0.849				0.886				0.865			
	Sat4	0.807				0.876				0.838			
Customer trust	Trt1	0.852				0.816				0.837			
	Trt2	0.854	0.875	0.914	0.727	0.867	0.868	0.910	0.716	0.860	0.872	0.912	0.722
	Trt3	0.868				0.872				0.870			
	Trt4	0.836				0.829				0.833			
Customer loyalty	Loyl1	0.854				0.843				0.850			
	Loyl2	0.816				0.848				0.830			
	Loyl3	0.858	0.860	0.905	0.704	0.855	0.866	0.909	0.714	0.857	0.863	0.907	0.709
	Loyl4	0.828				0.834				0.830			
	Loyl5	*Deleted*				*Deleted*				*Deleted*			

Hair et al. (2019) suggested assessing collinearity before delving into structural relationships to confirm that regression outcomes are not skewed. VIF values above 5 suggest potential collinearity among predictor constructs. Ideally, VIF values should be at or below 3. As demonstrated in Table 3, all constructs in this study have VIF values under 3, signifying that collinearity does not pose a problem, allowing the investigation of structural relationships to proceed.

Table 3

Collinearity assessment - Variance Inflation Factor

	Gen Z			Gen Y			Complete		
	Customer loyalty	Customer satisfaction	Customer trust	Customer loyalty	Customer satisfaction	Customer trust	Customer loyalty	Customer satisfaction	Customer trust
1. Personal contact quality		1.448			1.659			1.515	
2. Order condition		2.391			2.697			2.478	
3. Product availability		2.525			2.291			2.413	
4. Timeliness		2.378			2.715			2.490	
5. Order accuracy		2.504			2.608			2.533	
6. Cash on delivery			1.875			2.601			2.101
7. Order discrepancy handling			1.875			2.601			2.101
8. Customer satisfaction	1.802			1.550			1.677		
9. Customer trust	1.802			1.550			1.677		

4.3 Structural model

For discriminant validity, we used highly used tests in the literature for SEM models. And combined them in one table: HTMT- "Heterotrait-Monotrait ratio" and Fornell-Larcker criterion. In HTMT all variables have to be under 0.85. In the Fornell-Larcker criterion any square root of AVE must be bigger than its correlation with any other variable in the model. Table 4 shows that all values for HTMT are below 0.85 and that all AVE square roots are higher than their correlation with any other variable in the model. This proves that every variable in the structural model is distinct from other variables, proving discriminant validity.

Table 4

Fornell and Larcker's / MTMT discriminant validity tests

	1	2	3	4	5	6	7	8	9	10
1. Cash on delivery	*0.851*	0.83	0.72	0.76	0.7	0.73	0.84	0.67	0.74	0.72
2. Customer loyalty	0.721	*0.842*	0.75	0.8	0.77	0.73	0.84	0.67	0.73	0.76
3. Customer satisfaction	0.633	0.648	*0.852*	0.73	0.84	0.8	0.73	0.6	0.8	0.81
4. Customer trust	0.667	0.696	0.635	*0.850*	0.74	0.74	0.84	0.7	0.71	0.74
5. Order accuracy	0.594	0.654	0.720	0.632	*0.865*	0.82	0.79	0.61	0.82	0.83
6. Order condition	0.622	0.621	0.688	0.630	0.686	*0.870*	0.74	0.6	0.81	0.82
7. Order discrepancy handling	0.724	0.727	0.629	0.749	0.670	0.628	*0.839*	0.73	0.76	0.73
8. Personal contact quality	0.573	0.570	0.508	0.595	0.510	0.499	0.618	*0.863*	0.61	0.62
9. Product availability	0.634	0.619	0.687	0.606	0.681	0.676	0.644	0.508	*0.869*	0.803
10. Timeliness	0.613	0.641	0.686	0.627	0.689	0.684	0.615	0.516	0.670	*0.863*

Note: Numbers in Bold italic are the square root.
Numbers below the square root represents Fornell and Larcker's test.
Numbers above the square root represents HTMT test.

The R^2 values, often referred to as the "coefficients of determination," serve as a gauge for the in-sample predictive power within the model, offering insight into the proportion of variance in each endogenous latent construct that can be accounted for. R^2 values of 0.25 are considered weak, 0.50 indicate a moderate level, and 0.75 are considered substantial in their explanatory power (Haier et al, 2019; Henseler et al, 2009). For the complete sample dataset, R^2 values for customer loyalty (55.5%), customer satisfaction (64.1%), and customer trust (59.3%) also reflect moderate predictive power, reinforcing the model's robustness across the full sample. Further, for Gen Z, the R^2 values for customer loyalty (56.6%), customer satisfaction (60.8%), and customer trust (55.1%). The Gen Y cohort presents even higher R^2 values, with customer loyalty at 60.5%, customer satisfaction at 70.2%, and customer trust at 67.0%.

Haier et al (2019) recommended Q²_predict value greater than zero surpasses the baseline level of predictive accuracy. The model Q²_predict values for the complete sample of 0.601 for customer loyalty, 0.641 for customer satisfaction, and 0.589 for customer trust. For Gen Y 0.629 for customer loyalty, 0.687 for customer satisfaction, and 0.664 for customer trust. Furthermore, for Gen z 0.566 for customer loyalty, 0.608 for customer satisfaction, and 0.551 for customer trust. These figures, substantially above zero, highlight the model's strong predictive capabilities, as illustrated in Table 5.

For the whole sample, all hypotheses were accepted, indicating that the logistics service quality determinants have a significant effect on customer satisfaction. Specifically, the effect of personal contact quality ($\beta = 0.067$, T = 2.370, $p < 0.05$), order condition ($\beta = 0.195$, T = 4.261, $p < 0.001$), as does product availability ($\beta = 0.202$, T = 4.999, $p < 0.001$). Timeliness also contributes positively to customer satisfaction ($\beta = 0.186$, T = 4.363, $p < 0.001$), with order accuracy showing a robust effect

(β = 0.287, T = 6.530, p < 0.001). Furthermore, policy service quality determinants and their effects on customer trust, cash on delivery is a significant factor (β = 0.262, T = 6.445, p < 0.001), and order discrepancies is a very strong determinant of customer trust (β = 0.559, T = 14.348, p < 0.001). Lastly, customer satisfaction has a strong positive impact on customer loyalty (β = 0.345, T = 7.960, p < 0.001), and similarly, customer trust significantly influences customer loyalty (β = 0.477, T = 11.459, p < 0.001).

Table 5
Evaluation of explanatory power and predictive power

	Gen Z		Gen Y		Complete	
	R^2	Q²predict	R^2	Q²predict	R^2	Q²predict
Customer loyalty	0.566	0.613	0.605	0.629	0.555	0.601
Customer satisfaction	0.608	0.594	0.702	0.687	0.641	0.633
Customer trust	0.551	0.544	0.670	0.664	0.593	0.589

For the Gen Z cohort, the PLS-SEM results indicate that except for H1, all hypotheses are accepted, showing significant effects. In terms of logistics service quality determinants impacting customer satisfaction: Personal contact quality has a minimal and non-significant impact (β = 0.034, T = 0.912, p = 0.362), implying it may not be as valued by Gen Z customers. Conversely, order condition significantly affects customer satisfaction (β = 0.164, T = 2.713, p < 0.01), as does product availability (β = 0.122, T = 2.205, p < 0.05). Timeliness shows a strong, positive effect on satisfaction (β = 0.271, T = 5.348, p < 0.001), and order accuracy emerges as a critical factor (β = 0.312, T = 5.109, p < 0.001). Regarding policy service quality determinants related to customer trust, cash on delivery has a substantial effect (β = 0.203, T = 3.859, p < 0.001), while order discrepancy handling shows a very strong positive influence (β = 0.588, T = 11.355, p < 0.001). Finally, the effect of customer satisfaction on loyalty is notably strong (β = 0.515, T = 10.223, p < 0.001), and customer trust also significantly contributes to loyalty within this demographic (β = 0.304, T = 5.941, p < 0.001).

For Gen Y, the PLS-SEM analysis verifies all hypotheses except H4. In assessing logistics service quality determinants and their impact on customer satisfaction: the quality of personal contact, although not robust, has a significant positive influence on customer satisfaction (β = 0.098, T = 2.229, p < 0.05). This suggests a moderate valuation of personal interaction among Gen Y customers. The condition of orders upon arrival presents a substantial positive effect on customer satisfaction (β = 0.260, T = 4.202, p < 0.001), as does the availability of products (β = 0.293, T = 5.238, p < 0.001), highlighting these factors as important for Gen Y. Hypothesis 4. (Timeliness effect on customer satisfaction), however, does not demonstrate a significant impact (β = 0.065, T = 0.924, p = 0.356), indicating that receiving the order in less than 30 minutes is not a priority concern for customer satisfaction for millennials. Conversely, the accuracy of orders remains a decisive element (β = 0.261, T = 4.336, p < 0.001). With regard to the determinants of policy service quality affecting customer trust, options for cash on delivery exhibit a strong positive effect (β = 0.386, T = 7.358, p < 0.001), and the handling of order discrepancies is also significantly influential (β = 0.480, T = 9.413, p < 0.001). Lastly, the role of customer satisfaction in fostering customer loyalty, though present, is relatively moderate (β = 0.162, T = 2.819, p < 0.01). However, the impact of customer trust on loyalty is especially pronounced (β = 0.670, T = 12.134, p < 0.001), signifying trust as a cornerstone for cultivating loyalty in the Gen Y segment.

Table 6
Hypotheses testing

	Gen Z				Gen Y				Complete			
Hypotheses	β	T	P	Result	β	T	P	Result	β	T	P	Result
H1. PCQ → CS	0.034	0.912	0.362	x	0.098	2.229	0.026	√	0.067	2.370	0.018	√
H2. OC → CS	0.164	2.713	0.007	√	0.260	4.202	0.000	√	0.195	4.261	0.000	√
H3. PA → CS	0.122	2.205	0.028	√	0.293	5.238	0.000	√	0.202	4.999	0.000	√
H4. T → CS	0.271	5.348	0.000	√	0.065	0.924	0.356	x	0.186	4.363	0.000	√
H5. OA → CS	0.312	5.109	0.000	√	0.261	4.336	0.000	√	0.287	6.530	0.000	√
H6. COD → CT	0.203	3.859	0.000	√	0.386	7.358	0.000	√	0.262	6.445	0.000	√
H7. ODH → CT	0.588	11.355	0.000	√	0.480	9.413	0.000	√	0.559	14.348	0.000	√
H8. CS → CL	0.515	10.223	0.000	√	0.162	2.819	0.005	√	0.345	7.960	0.000	√
H9. CT → CL	0.304	5.941	0.000	√	0.670	12.134	0.000	√	0.477	11.459	0.000	√

Note: (PCQ): Personal Contact Quality, (CS): Customer Satisfaction, (OC): Order Condition, (PA): Product Availability, (T): Timeliness, (OA): Order Accuracy, (COD): Cash on Delivery, (CT): Customer Trust, (ODH): Order Discrepancy Handling, (CL): Customer Loyalty

4.3.1 Multi-group analysis

In the final part of the research, we looked at the notable variations between Gen Z and Gen Y. In the multi-group analysis presented in table 7 between Gen Z and Gen Y, several relationships exhibit no significant differences. The impact of personal contact quality, order condition, and order accuracy on customer satisfaction shows negligible variance between the two cohorts, with p-values of 0.267, 0.266, and 0.555 respectively, indicating these factors influence both generations similarly. Similarly, the difference in how order discrepancy handling affects customer trust is also non-significant (p-value = 0.14),

suggesting that both generations perceive the handling of order discrepancies in a comparable manner when it comes to establishing trust.

Table 7
Multi-group analysis

	Difference (Gen Z - Gen Y)	P-value
Personal contact quality → Customer satisfaction	-0.063	0.267
Order condition → Customer satisfaction	-0.096	0.266
Product availability → Customer satisfaction	-0.171	0.032*
Timeliness → Customer satisfaction	0.206	0.019*
Order accuracy → Customer satisfaction	0.051	0.555
Cash on delivery → Customer trust	-0.183	0.016*
Order discrepancy handling → Customer trust	0.109	0.14
Customer satisfaction → Customer loyalty	0.353	0.000*
Customer trust → Customer loyalty	-0.366	0.000*
Note: *The Differences are significant in the relationships between the Gen Z and Gen Y (P < 0.05).		

On the other hand, significant generational differences are observed in several key areas. Gen Y places a higher emphasis on product availability's effect on customer satisfaction compared to Gen Z, as evidenced by a significant difference (p-value = 0.032). Timeliness is more influential for Gen Z, as indicated by a significant difference in its effect on customer satisfaction (p-value = 0.019). A notable difference is observed for payment options, where cash on delivery is a stronger determinant of customer trust for Gen Y (p-value = 0.016). Also, customer satisfaction and customer trust have noticeably different impacts on customer loyalty between the two groups; customer satisfaction plays a more critical role in Gen Z (p-value < 0.001), while customer trust is more significant for Gen Y (p-value < 0.001), highlighting distinct generational priorities and their implications for loyalty.

5. Discussion

This study aimed to explore the effect of logistics service quality's determinants in terms of (personal contact quality, shipment condition, product availability, timely product delivery, and order accuracy) on customer satisfaction. Policy service quality in terms of (Cash on delivery and order discrepancy handling) on customer trust. While also customer satisfaction and trust's effects on customer loyalty within the context of quick commerce applications in Jordan, with a specific focus on comparing generational differences between Gen Y and Gen Z users.

The results for the complete sample group revealed that all logistics service quality variables significantly impact customer satisfaction for the complete sample. This aligns with previous research in e-commerce logistics (Al-Adwn et al., 2022; Akıl & Ungan, 2021; Lestari & Ganawati, 2023; Jiang et al., 2021) and emphasizes the importance of efficient and reliable delivery processes in driving customer satisfaction within quick commerce.

Order accuracy had the strongest effect on customer satisfaction. These findings are similar to the studies' results of (Chaisaengduean, 2019; Prasetyo et al., 2021; Shahril et al., 2021) emphasizing the vital role of order accuracy plays in affecting customer satisfaction. Furthermore, both COD and order discrepancy handling affected customer trust. This aligns with research by Akıl & Ungan (2021) and Lestari & Ganawati (2023), emphasizing the importance of efficient and fair resolution processes for building trust in quick commerce transactions.

Both customer satisfaction and customer trust significantly contribute to customer loyalty. This finding echo numerous studies (Kolondam et al., 2023; Akıl & Ungan, 2021; Leppäniemi et al., 2016; Koay et al., 2022) and underscores the importance of building both satisfaction and trust to cultivate loyal customers in the quick commerce domain.

However, when analyzing generational differences, some interesting findings emerged:

The multi-group analysis further revealed that while some factors like order condition and order accuracy impact customer satisfaction similarly across generations as well as the effect of Order discrepancy handling on Customer trust, other areas show significant differences. Notably, for gen Z the results showed that personal contact quality has no effect on their satisfaction. They may prefer contactless services (Kim et al., 2021). Gen Z may prioritize other aspects of quick commerce service quality over personal interactions with delivery personnel. If the other dimensions are met or exceeded, the lack of strong personal contact might not significantly impact on their satisfaction. It's also important to note that this does not imply that personal contact quality is irrelevant for Gen Z. However, in the context of quick commerce, personal contact is just merely the driver handing the order to the customer.

On the other hand, The finding that Gen Y in this study doesn't seem to prioritize ultra-fast delivery (under 30 minutes). Grant (2022) argues that the preference for rapid grocery delivery within an hour is 2.25 times higher among Gen Z compared to Millennials, indicating a significant generational difference in expectations for delivery speed. Having experienced the evolution of online shopping and delivery services, Gen Y might be more accustomed to waiting longer for deliveries and might not place as much value on the "instant gratification" aspect of quick commerce. Gen Y might engage in more planned

grocery shopping. If they typically order groceries in advance, the need for delivery within 30 minutes might be less pressing, unlike Gen Z with their reputation as "digital natives" who value speed and efficiency, highlighting the importance of rapid delivery for their satisfaction.

Gen Y places significantly higher importance on product availability for their satisfaction compared to Gen Z. Larano et al, 2023 argue that millennials exhibit a greater degree of care compared to Gen Z in terms of the diversity and variety of products during online purchases. Gen Y grew with traditional grocery shopping experiences where a wide selection of products is available. On the other hand, Gen Z might be willing to sacrifice a little of product availability in exchange for other benefits like speed and convenience.

In addition, cash on delivery is a stronger factor affecting customer trust for Gen Y than for Gen Z. Rahman (2015) argued that cash on delivery is an affecting factor for Gen Y trust in e-commerce. The differences can be attributed to several factors. Gen Y might have greater concerns about online payment security, preferring the tangible and immediate nature of cash transactions. Additionally, Gen Y might have been less familiar and willing to take risks with digital payment methods compared to Gen Z.

Customer satisfaction plays a significantly stronger role in driving loyalty for Gen Z, while customer trust is more important for Gen Y. This suggests that Gen Z might be more readily influenced by positive experiences and immediate satisfaction when deciding whether to continue using a quick commerce platform. Gen Y, on the other hand, might prioritize trust and reliability as key drivers of loyalty, potentially valuing long-term consistency and a sense of security over immediate gratification.

6. Theoretical and practical implications

This study makes several theoretical contributions to the understanding of quick commerce. It addresses the identified research gap regarding the lack of studies examining quick commerce from a customer perspective, particularly in terms of generational differences. This study integrates both logistics service quality (personal contact quality, shipment condition, product availability, timely product delivery, and order accuracy) and policy service quality (cash on delivery, order discrepancy handling) into a single model to examine their effects on customer trust and satisfaction for Jordanian quick commerce. Further, this study is among the first to compare Gen Y and Gen Z users' experience within the quick commerce market. By highlighting the significant differences in how these generations perceive various service quality aspects, the study contributes to better understanding generational influences on customer behavior in quick commerce.

Several practical implications can be taken from the results of this study. It is suggested to prioritize product availability and order accuracy, as these were found to be main drivers in customer satisfaction for both generations. Quick commerce platforms must make sure that they are able to deliver orders accurately and on time and maintain sufficient supply levels to meet the demands of customers across all generations. The trust between platform and user is also highlighted, with efficient order discrepancy handling being found to be a significant factor in building customer trust. If a system can find ways of resolving disagreements or errors in orders quickly it will significantly enhance how much users trust the platform.

It was also found that Gen Z placed a significant emphasis on time, so it would be wise for the platform to optimize delivery processes to ensure fast and efficient delivery times. This could involve investing in strategically located dark stores and optimizing delivery routes. Finally, platforms should emphasize marketing communication based on generational priorities. For Gen Z customers highlighting speed, and convenience might work best while for Gen Y focusing on product availability, trust, and COD could be more impactful.

7. Conclusion and future research

This study delves into the burgeoning realm of quick commerce, examining the interplay between logistics service quality (personal contact quality, shipment condition, product availability, timely product delivery, and order accuracy), policy service quality (cash-on-delivery and order discrepancy handling), customer trust, customer satisfaction, and customer loyalty. By integrating these elements and exploring generational differences between Gen Y and Gen Z users, the research offers valuable insights for quick commerce platforms seeking to optimize their services and cater to the distinct preferences of these influential consumer groups.

The findings stressed the importance of order accuracy and product availability in driving customer satisfaction for both generations. Additionally, order discrepancy handling is crucial in building customer trust. However, generational differences when multigroup analysis between Gen Y and Z are observed in the relative importance of personal contact quality, timeliness, and COD. Gen Z prioritizes speed, placing greater value on time of delivery and less concern about personal contact with delivery personnel, while Gen Y rates product availability and COD more highly. These insights provide valuable guidance for quick commerce platforms to fit their strategies with the specific priorities of each generation.

While this study provides valuable insights into the quick commerce industry, it is not without limitations. The research was conducted in Jordan and thus may not be applicable to other cultures. Also, future researchers could extend it to other cultures and incorporate variables that were not considered in this study. There could be moderating variables like user interface and

user experience that weren't accounted for in this study. Lastly, given how quickly quick commerce is evolving, it would be better if future studies make longitudinal studies on quick commerce as it will provide a more holistic view.

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