

Capturing Customer-Centred Functions of Local eCommerce Platforms

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1 ABSTRACT

The COVID-19 pandemic fuelled the trend of linking online consumption to local interests (such as buying local or localising production). In Austria, the pandemic fostered local eCommerce platforms offering local goods or goods from local retailers. This concept of local digitalism (Fuentes-Bautista, 2011) focuses on the spatial aspects of consumption and production. However, it is difficult for local eCommerce platforms to achieve sufficient online traffic next to internationally established eCommerce platforms. Therefore, evidence-based knowledge on essential customer-centred functions of eCommerce platforms supporting local retail is required. In this study, we screen a sample of local eCommerce platforms in Austria (n=40) and derive a list of customer-centred functions resulting in more than 100 customer-centred functions. A revision procedure with local retail experts helps to condense and categorise the listed functions. Based on a typology adaptation of Standing, Standing & Love (2010) and Bakos (1998), the functions ultimately comprise six categories: (1) performance parameters (i.e., all functions indicating platform performance such as website traffic, mobile optimised implementation, app availability, platform reach and types of products and services offered on the platform), (2) information and connection (i.e., all functions supporting information retrieval on the platform, its vendors and products as well as product search and product filtering), (3) matching (i.e., all functions enabling the matching process between buyer and seller after product selection), (4) customizability (i.e., all settings on the platform to be individually changed by the customer), (5) transaction and fulfilment (i.e., all functions enabling the transaction process and fulfilment services for product purchase and delivery), and (6) sustainability (e.g., information on product materials, product origin, product delivery, or quality seals).

Subsequently, independent platform visitors analyse the platform sample (n=40) using the consolidated list of customer-centred functions and a binary coding scheme (0 = function not available on the platform, 1 = function available on the platform). This evaluation results in customer-centred perception matrices for each local eCommerce platform. Based on the matrices, we derive the overall implementation degree for every customer-centred function. Also, we conduct Fisher's exact test to determine whether there is a significant association between website traffic and function range. Out of the long list of customer-centred functions, we finally extract and discuss the most relevant customer-centred functions for local eCommerce platforms.

Keywords: COVID-19 pandemic, local retail, local eCommerce platforms, customer-centred functions, online consumption

2 INTRODUCTION

On large international eCommerce platforms, such as Amazon or eBay, the boundaries between business-to-business (B2B) and business-to-consumer (B2C) are blurring and regional, national, or international barriers tend to disappear (Pan, Shankar & Ratchford, 2002). With the emergence of local eCommerce platforms, a countervailing trend of platforms bringing the location back into the focus of their business models is becoming visible. Local eCommerce platforms sell the existing range of goods from local shops through their platform and try to gain time advantages in delivery by having the participating local shops act as decentralised shops for households in the neighbourhood (Wirtz et al., 2019). On the one hand, this approach seems promising as it supports local shops in their digital transformation and in overcoming to participate in eCommerce (Stockdale&Standing, 2004 and Sandberg& Håkansson, 2014). On the other hand, challenges arise in getting local retail to cooperate and use shared services between competitors. Studies show that local retail businesses, like other small and medium-sized enterprises, are still hesitant to adopt eCommerce channels (Bollweg et al., 2020 and Pantano&Viassone, 2014) or participate in existing international eCommerce platforms. Thus, the phenomenon of the hesitant digital transformation of local retail businesses is linked to numerous internal (e.g. financial circumstances, lack of knowledge) and external (e.g. lack of

standards, lack of subsidisation, lack of marketing) framework conditions (adoption barriers). For local eCommerce platforms to be competitive next to internationally established eCommerce platforms, evidence-based knowledge about the most relevant customer-centred functions on such platforms is crucial.

3 METHODOLOGY

This study identifies relevant customer-centred functions for local eCommerce platforms. As shown in other studies (Radziszewska, 2018 or Jhingran, 2000), local eCommerce platforms are not exclusively those offering product purchase and fulfilment, but also product finders, store finders, and social media channels. Thus, we define four different types of local eCommerce platforms in the first step. With the help of an explorative web search and expert suggestions from the Austrian Retail Association, we compile a manifold sample of eCommerce platforms for each platform type. General eCommerce platforms and, in particular, those with a focus on local retail are taken into account. The sample includes international and Austrian eCommerce platforms (n=40). Visiting and screening the platforms results in a long list of customer-centred functions. An expert talk with participants from the economy, local retail, and science leads to a final and content-evaluated list of customer-centred functions.

Additionally, we define and collect performance values for each platform (i.e. website traffic, page loading time, app availability, mobile optimised implementation). Subsequently, four independent coders visit and assess each platform using the list of customer-centred functions and a binary coding scheme (0 = function is not implemented, 1 = function is implemented). As a result, four independent assessment matrices are available for each platform. The assessment matrices enable the degree of implementation and perceptual values for each function and platform type. We conduct Fisher's Exact Test (Li, 2014) to describe a possible relationship between function range and website traffic. Out of the long list of customer-centred functions, we finally extract and discuss the most relevant customer-centred functions for local eCommerce platforms.

4 LOCAL E-COMMERCE PLATFORMS: THE SAMPLE

Based on a typology adaptation of Nickerson (2002), Bärsch et al. (2019) and Hübner et al. (2020), we define four types of local eCommerce platforms: marketplaces, product finders, store finders, and social media channels. Marketplaces provide full functionality from product search to transaction and fulfilment, whereas product finders and store finders help users find or locate a product or store. Respectively, product finders and store finders require less functionality than marketplaces but can potentially foster the local aspect of product search. Social media channels play a specific role when it comes to trendsetting, influencing, and product choice. Ideally, social media channels promote local stores through advertisements and product promotions (Ravi&Joel, 2019). In this study, social media channels are a substantial part of eCommerce but will not be assessed regarding their functionalities. The compiled platform sample considers international and Austrian eCommerce platforms, general eCommerce platforms and eCommerce platforms focusing on local retail. The sample consists of 24 marketplaces, 13 product finders, and three store finders.

5 CUSTOMER-CENTRED FUNCTIONS FOR LOCAL E-COMMERCE PLATFORMS

The functions implemented on local eCommerce platforms are not uniformly structured and differ significantly in their range. By screening the platform sample, we create a list of customer-centred functions for each platform type. Customer centred-functions are analysed and discussed in Bärsch et al. (2019) and Hwang& Preiser-Houy (2012). In this study, the list of customer-centred functions is based on Bärsch et al. (2019) in its structure but offers a broader range of functionalities.

Information and Connection: This category comprises all functions supporting information retrieval on the platform, its vendors and products, and the product search and product filter process. Customer support (i.e., all functions enabling the customer to contact the platform operators or retailers) and platform reviews are part of this category.

Matching: Matching refers to all functions enabling the matching process between buyer and seller after product selection. The category includes detailed product information, product comparison (regarding price, payment options, duration of delivery), product reviews, store or retailer reviews, and loyalty programme (such as free delivery or special offers).

Customizability: Customisable functions can be changed individually (i.e. registration, account settings and privacy cockpit).

Transaction and Fulfilment: Transaction and fulfillment refer to all functions enabling the transaction and fulfillment services for product purchase and delivery. The category comprises payment options, delivery options, and return options.

Sustainability: This category checks whether the platform provides sustainability information on the platform itself, the products, or the delivery process (e.g., information on product materials, product origin, product delivery, or quality seals). Table 2 represents the categorisation scheme for the identified customer-centred functions.

Performance Parameters	Information and Connection	Matching	Customizability	Transaction and Fulfilment	Sustainability
Type of platform	Transparency & Trust	Product details	Registration	Payment options	Sustainability information – platform
Platform performance	Customer support	Product comparison	Account settings	Delivery options	Sustainability information – products
Platform reach	Product search and product filter	Product reviews	Privacy cockpits	Return options	Sustainability information – delivery
Types of offers	Platform reviews	Store or retailer reviews			
		Loyalty programme			

Table 2: Categorisation scheme for customer-centred functions

In total, we create a list of 103 customer-centred functions. The functions are not always equally relevant for each marketplace type, so marketplaces are assigned 103 functions, product finders 72 functions and store finders 68 functions.

6 PLATFORM ASSESSMENT: RESULTS

Four independent coders visit each platform and use a binary coding scheme to check whether the listed function is implemented on the platform or not (0= function not implemented on the platform, 1=function implemented on the platform). The assessment matrices enable the degree of implementation to be determined for each function and platform type (table 3 to table 8).

6.1 Implementation degrees

PLATFORM PERFORMANCE	Marketplaces n=24	Product finders n=13	Store finders n=3
Platform performance			
Website traffic indicated	45,83	30,77	33,33
Available as an app	37,50	23,08	33,33
Mobile optimized implementation	100,00	100,00	100,00
Platform reach			
regional	4,2	0,00	33,33
national	45,8	46,15	0
international	45,8	38,46	66,66
Types of offers			
Products	100,00	100,00	100,00
Services	13,00	30,77	66,67
Jobs	0,00	23,08	33,33
Real Estate	0,00	23,08	0,00

Table 3: Implementation degrees [%] for platform performance parameters. NR indicates that the function is not a required function for the respective platform type.

Website traffic is an important performance indicator for eCommerce platform evaluation (Singh & Kumari, 2019). In this study, we use open-source software to identify website traffic on each platform. This measurement goes along with limitations as the tool can only report very high website traffic. Thus, for platforms with low website traffic, no data is collected. In our sample, 11 out of 24 marketplaces show high website traffic (45,83 per cent). Website traffic on the recorded marketplaces ranges from 164.650 to 498.730.000 monthly visits. Website traffic on recorded product finders ranges from 344.210 to 21.870.000 monthly visits.

Regarding store finders, one platform out of three shows website traffic of 144.960 monthly visits. All examined platforms are implemented for mobile use. When it comes to app availability, 9 out of 24 marketplaces are available as an app (37,50 per cent), 3 out of 13 product finders (23,08 per cent) and 1 out of 3 store finders (33,33 per cent).

INFORMATION AND CONNECTION	Marketplaces (n=24) 31 functions	Product finders (n=13) 28 functions	Store finders (n=3) 27 functions
Transparency and Trust			
About	87,50	61,54	66,67
Payment information – desktop	62,50	NR	NR
Delivery information – desktop	33,33	NR	NR
Return information – desktop	29,17	NR	NR
Customer support			
E-Mail	70,83	76,92	33,33
Hotline	70,83	69,23	33,33
Contact Formular	54,17	38,46	100,00
Chatbot	20,83	7,69	0,00
WhatsApp, Messenger, Telegram	8,33	7,69	0,00
Q&A	75,00	30,77	33,33
Social Media	91,67	69,23	66,67
Product search and product filter			
Search field for product search	70,83	76,92	0,00
Product category	100,00	84,62	66,67
Keywords/tags	95,83	92,31	33,33
Availability	58,33	38,46	0,00
Availability in local store	8,33	7,69	0,00
Payment options	0,00	7,69	NR
Sale	70,83	38,46	100,00
Latest Products	66,67	38,46	0,00
Latest Stores	4,17	0,00	33,33
Sex	66,67	38,46	0,00
Brand	50,00	46,15	0,00
Distance from current location	16,67	23,08	0,00
Price range	83,33	61,54	0,00
Product review	54,17	23,08	0,00
Local retailer	50,00	76,92	66,67
Duration of delivery	25,00	30,77	33,33
Current position//region/province	29,17	53,85	66,67
Platform review			
Comments	4,17	0,00	0,00
Stars	4,17	0,00	0,00
Only as registered visitor	4,17	0,00	0,00

Table 4: Implementation degrees [%] within the category "Information and Connection". NR indicates that the function is not a required function for the respective platform type.

On average, marketplaces implement 14 out of 31 functions (45,16 per cent) within the category "Information and Connection". Product finders average 11 out of 28 functions (39,29 per cent), and store

finders 7 out of 27 functions (25,93 per cent). Transparency and trust play a significant role in building a trusted relationship between customer and platform. Indicating the payment, delivery and return options directly on the desktop is essential information for the platform visitor. For marketplaces, a Q&A rubric on the platform is an essential function for customer support. This function is not yet implemented on all marketplaces. Functions for product search and product filter differ in their implementation degrees. Filter functions for payment and delivery options are missing. Customer-generated content (CGC) can help platform operators to improve the platform successively. Review options for the platform itself as well as for products and retailers help to identify gaps and existing problems. Not only for platform review but also product and retailer review, the implementation degrees are low.

MATCHING	Marketplaces (n=24) 29 functions	Product finders (n=13) 27 functions	Store finders (n=3) 27 functions
Product details			
Product location on map	8,33	23,08	33,33
Product visualisation	100,00	100,00	33,33
Social media inspiration	0,00	0,00	0,00
Textual description of product	95,83	76,92	0,00
Availability	83,33	53,85	0,00
Availability in local store	12,50	38,46	0,00
Duration of delivery	70,83	46,15	0,00
Product ID	58,33	23,08	0,00
Quality seals	20,83	7,69	0,00
Materials/contents	79,17	53,85	0,00
Manual	0,00	0,00	0,00
Information on local retailer	75,00	100,00	33,33
Local retailer: contact information	54,17	84,62	66,67
Indication of delivery options	50,00	61,54	0,00
Product comparison			
Other customers also bought...	41,67	NR	NR
Similar products	66,67	61,54	0,00
Price at other retailers	12,50	61,54	0,00
Availability at other local retailers	12,50	53,85	0,00
Spatial proximity of product	0,00	0,00	0,00
Duration of delivery	4,17	38,46	0,00
Product review			
Comments	54,17	15,38	0,00
Stars	62,50	23,08	0,00
Only as registered visitor	45,83	15,38	0,00
Retailer review			
Comments	37,50	15,83	0,00
Stars	41,67	30,77	0,00
Only as registered visitor	41,67	15,38	0,00
Loyalty programme			
Vouchers	91,67	NR	NR
Customer retention	87,50	46,15	66,67
Ask question about a product	20,83	15,38	0,00

Table 5: Implementation degrees [%] within the category "Matching". NR indicates that the function is not a required function for the respective platform type.

On average, marketplaces implement 13 out of 29 matching functions (44,83 per cent). Product finders implement 10 out of 27 matching functions (37,04 per cent) and store finders 2 out of 27 matching functions (7,41 per cent). For product details and specifications, the integration of social media inspiration has not yet been implemented on any of the analysed platforms. Also, the digital availability of documents such as manuals has not yet been implemented on any of the platforms. Regarding product comparison, the indication of delivery duration at different retailers shows a low implementation degree. Product reviews show a higher implementation degree than retailer reviews, and stars occur more often than comments as review elements. Regardless of whether reviews are made publicly visible, the opportunity to give feedback on the platform, the product, the retailer, and the delivery are an essential element to successively improve the platform implementation and the processes along the customer journey. Marketplaces implement loyalty programmes in the form of vouchers to 90 per cent. Other customer retention strategies (such as customer card, personalisation options, special offers when subscribing to the newsletter) are implemented up to 87,50 per cent.

CUSTOMIZABILITY	Marketplaces (n=24) 20 functions	Product finders (n=13) 13 functions	Store finders (n=3) 10 functions
Registration			
Registration possible	95,83	61,54	33,33
Registration via a third party (Google etc.)	16,67	23,08	0,00
Classic registration	91,67	53,85	66,67
Purchase as guest possible	37,50	NR	NR
Account settings			
Define payment preference	25,00	NR	NR
Define delivery preference	8,33	NR	NR
See order history	91,67	NR	NR
Define preference for product origin	0,00	0,00	0,00
Define preference for local retailer	20,83	0,00	33,33
Import digital ID	4,17	0,00	0,00
Define recurring orders	4,17	NR	NR
See customized offers	25,00	15,38	0,00
Shopping Cart/Wish list	95,83	61,54	NR
Shopping cart/wish list divisible	20,83	7,69	NR
Shopping cart/wish list remains saved after closing the browser	50,00	38,46	NR
Indication of the warranty period	4,17	NR	NR
Deposit of all invoices	8,33	NR	NR
Avatar creation possible	4,17	0,00	0,00
Network character between users	16,67	0,00	0,00
Privacy Cockpit			
Privacy Cockpit available	20,83	7,69	0,00

Table 6: Implementation degrees [%] within the category "Customizability". NR indicates that the function is not a required function for the respective platform type.

Marketplaces average 7 out of 20 customisable functions (35,00 per cent). Product finders implement 2 out of 13 customisable functions on average (15,38 per cent) and store finders 1 out of 10 customisable functions (10 per cent). Personalisation options show low implementation degrees regarding the specification of a preferred product origin, delivery preferences, and recurring orders. Importing an existing digital ID (for

example, from another platform) and avatar creation seem to be relatively rarely implemented functions. The same result applies to storing product-specific documents, such as warranties or invoices, within the private account.

TRANSACTION AND FULFILMENT	Marketplace (n=24) 18 functions	Product finder (n=13) 0 functions	Store finder (n=3) 0 functions
Payment			
Multiple payment options	83,33	NR	NR
Delivery			
Multiple delivery options	54,17	NR	NR
Cost comparison between delivery options	62,50	NR	NR
The day of delivery is indicated	62,50	NR	NR
Different delivery speeds possible	37,50	NR	NR
Time comparison of delivery options	37,50	NR	NR
Specification of desired delivery day possible	4,17	NR	NR
Indication of the delivery time for each product	45,83	NR	NR
Free delivery	12,50	NR	NR
Free delivery from the specific value of goods	45,83	NR	NR
Greeting card	8,33	NR	NR
Gift	12,50	NR	NR
Same-day delivery	29,17	NR	NR
Pick-up stations	33,33	NR	NR
Collect directly in the shop (click & collect)	50,00	NR	NR
Order cancellation possible	70,83	NR	NR
Return management			
Free return	33,33	NR	NR
Return/change good directly in the shop	12,50	NR	NR

Table 7: Implementation degrees [%] within the category "Transaction and Fulfilment". NR indicates that the function is not a required function for the respective platform type.

Transaction and fulfillment functions only refer to marketplaces. Within this study, we define 19 functions for this category. Marketplaces average 8 out of 19 functions (42,11 per cent). Interestingly, within the category "delivery", the indication of the desired delivery day is not yet implemented often.

SUSTAINABILITY	Marketplace (n=24) 5 functions	Product finder (n=13) 4 functions	Store finder (n=3) 4 functions
Platform			
Quality seal	29,17	23,08	0,00
Product			
Type of production (e.g., handmade)	8,33	0,00	0,00
Product origin	16,67	7,69	33,33
Sustainability features	41,67	15,38	0,00
Delivery			
Sustainability comparison between delivery options	12,50	NR	NR

Table 8: Implementation degrees [%] within the category "Sustainability". NR indicates that the function is not a required function for the respective platform type.

On average, marketplaces implement 1 out of 5 sustainability functions, and product finders and store finders do not implement sustainability functions.

6.2 Fisher's Exact Test

To examine whether there exists a significant relationship between website traffic and function range, we perform Fisher's exact test. Table 9 shows the distribution of website traffic and function range for marketplaces. The average function range for marketplaces is 42 out of 103 functions. Thus, Marketplaces with more than 42 functions are assigned a high functionality range. Fisher's exact test will indicate whether the sown distribution between function range and website traffic is subject to randomness.

Marketplaces	Low website traffic	High website traffic	Total
Low functionality range (<42)	9	0	9
High functionality range (>42)	4	11	15
Total	13	11	24

Table 9: Distribution of website traffic and function range for marketplaces

The table suggests that marketplaces with a high function range are more likely to have high website traffic. The null hypothesis for Fisher's Exact Test states that website traffic and function range are independent. The two-sided p-value for this distribution results in .001, leading to a rejection of the null hypothesis. Thus, we have evidence that there is a significant association between website traffic and the function range of marketplaces. The effect size (phi coefficient) is .713, indicating a strong positive association between the variables.

6.3 Making the difference: Functions emphasising the local aspect

Completing a comprehensive list of customer-centred functions for local eCommerce platforms enables the definition of functions that particularly emphasise the local aspects of product and store search. Table 10 illustrates relevant functions for the enforcement of local retail on eCommerce platforms.

Information and Connection	Matching	Transaction Fulfilment	and Sustainability
Transparency and Trust	Product details	Delivery	Product Indication of product origin
Payment information – desktop	Product location on a map	Same-day delivery	
Delivery information – desktop	Availability of product in local store	Pick-up stations	
Return information – desktop	Information and location on local retailer on the map	Collect product directly in the shop (click&collect)	
Product search and filter	Contact information of the local retailer	Return management	
Availability of product in local store	Product comparison	Return or change product directly in the shop	
Spatial proximity of the product to the current location of the user	Availability of the product at other local retailers within a specific distance band		
Possibility to filter products by local store/retailer	Loyalty programme		
Possibility to filter products by current location, region, province	Possibility to directly contact the local retailer regarding product questions		
	Possibility to have a product repaired in a local store		

Table 10: Relevant functions for the enforcement of local eCommerce platforms

Seven functions within the category "Information and Connection" have relevance to strengthen local retail: payment information (desktop), delivery information (desktop), return information (desktop), availability in a local store, product distance from current location, selection of local retailer, product selection by current positions, region, or province. As the implementation degrees for these functions show, there is a particular

need for action in implementing spatial components such as visualising the product location on a map or indicating the distance of the product from the user's current location.

Also, ways to contact local retailers or to pick up and change local products directly at local retailers are relevant when implementing local eCommerce platforms. Thus, a direct contact link to the local retailer should always be available.

Regarding product comparison, the availability of products at other local retailers, the comparison based on the spatial proximity of the product to the current location of the user and the differences in duration of delivery at different retailers show low implementation degrees.

Relevant functions regarding local eCommerce platforms within the category "Transaction and Fulfillment" are same-day delivery, pick-up stations, collection of good directly in the shop and return and change of good directly. These functions are implemented in less than 50,00 per cent of the examined platforms but can make local eCommerce platforms stand out from established international eCommerce platforms.

The designation of product origin (e.g., regional products) and the resulting traceability of, for example, regional products can be regarded as a vital function to be implemented in local eCommerce platforms.

7 LIMITATIONS

Certain limitations must be taken into account when interpreting the results of this study. First, the platform sample includes a country-specific bias as the platform sample primarily consists of Austrian eCommerce platforms. International platforms are included as a counterpart to the Austrian platforms. Therefore, future studies should consider the integration of other international platforms. As for calculating the implementation degree of the customer-centred functions, an optimistic procedure is applied: implementation degree for each function results from the analysis of four independent coders. If one coder rates a function as 1 (=implemented) and the other three coders rate it as 0 (=not implemented), the function is still reported as implemented. Therefore, the follow-up study needs to intersect implementation levels with perception values.

8 CONCLUSION

This study outlines that, as with eCommerce platforms, the implemented customer-centred functions are not standardised and strongly differ. Thus, the study suggests a thematic scheme to structure customer-centred functions and assign them to different eCommerce platforms. The analysis of 40 different eCommerce platforms indicates the potential for local eCommerce marketplaces to integrate specific location-related functions. Fostering the implementation of location-related functions can be regarded as a significant issue to make local eCommerce platforms more competitive next to internationally established eCommerce platforms. The study also indicates a significant relationship between function range and website traffic, which we will further explore. Also, the study's results provide the basis for a subsequent priority assessment of customer-centred functions for local eCommerce platforms by blending implementation degrees with perception values.

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