



PRODUCTIVITY BENCHMARKING | 2015



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The FMI/ROFDA Productivity Benchmarking Industry Report represents a collaborative effort that lends itself to more meaningful and actionable information for our members and industry partners.

ROFDA's partnership with FMI, KSI, and SYNCONTEXT, proved critical in organizing and delivering this industry first. May you find this comprehensive report to be valuable to you and your organization.

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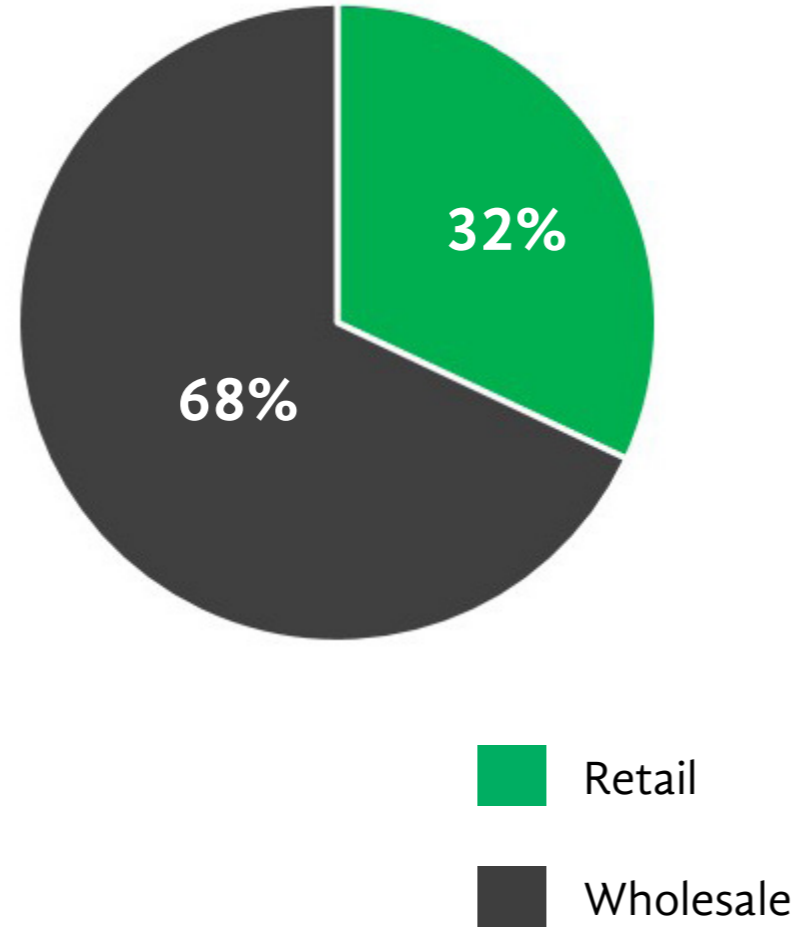
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PARTICIPANT PROFILE

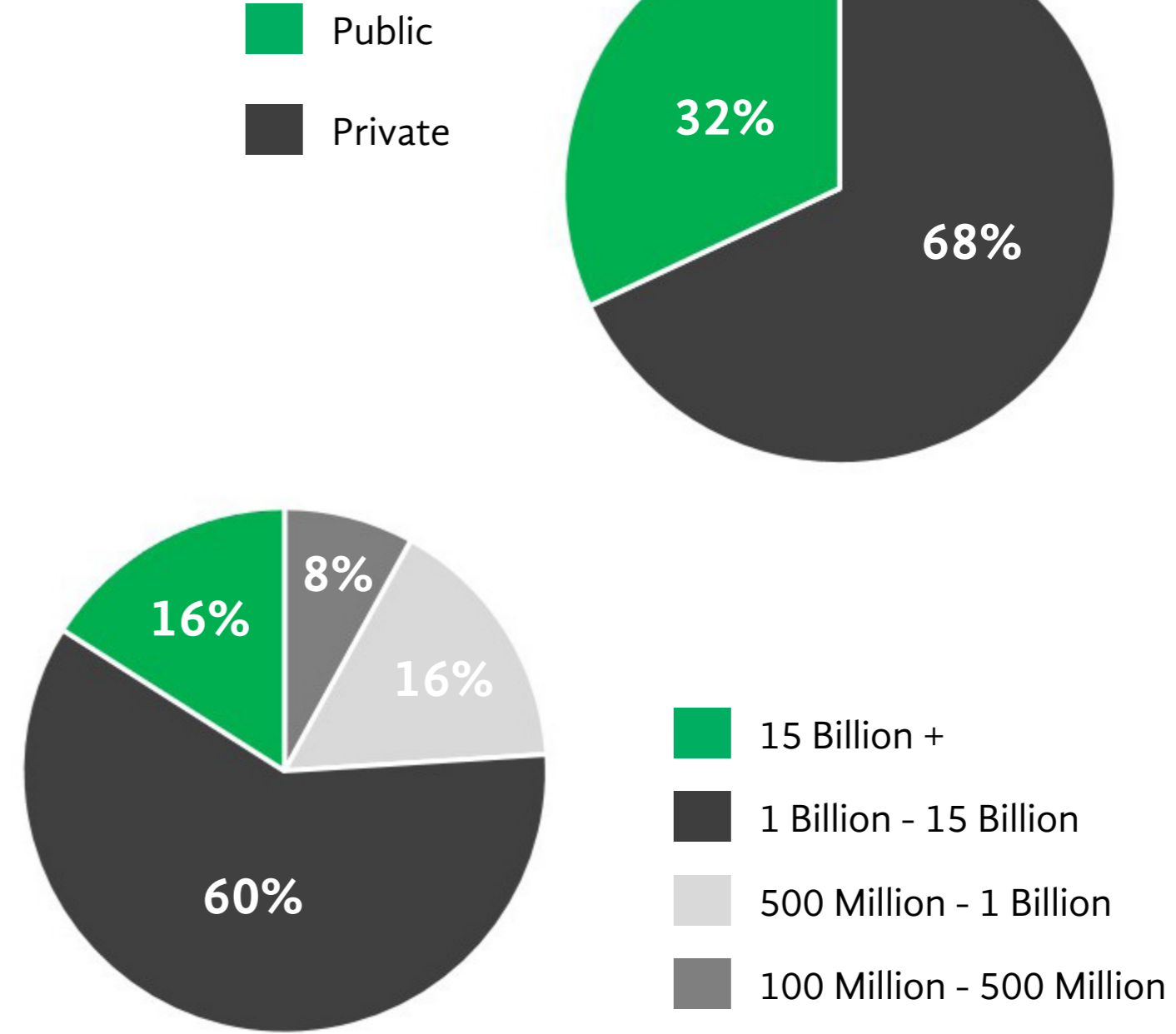
KEY COMPANY STATS

This year's study marks the first time that wholesalers' and retailers' productivity details have been compared in such a comprehensive way. In doing this, the study attracted companies of large and medium size, public and private, which has produced one of the largest and diverse warehouse productivity studies in North America.

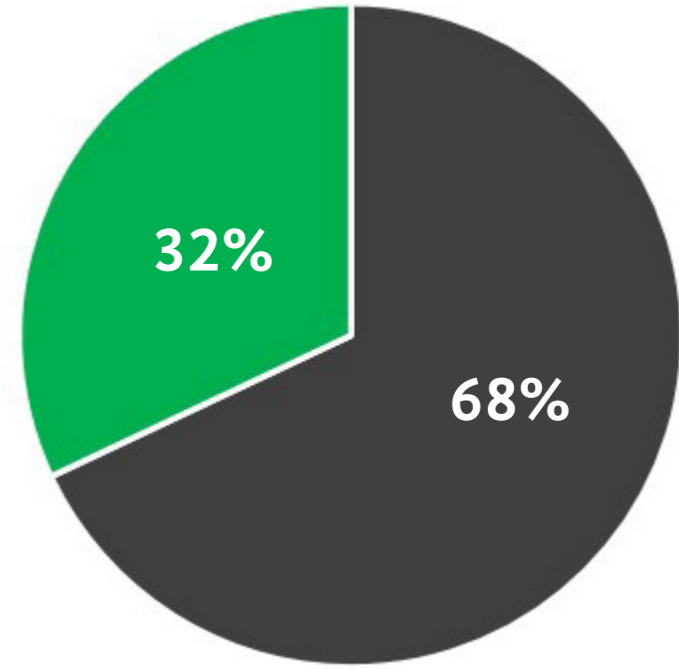
BUSINESS SECTOR



ANNUAL SALES BRACKET



PUBLIC VS. PRIVATE

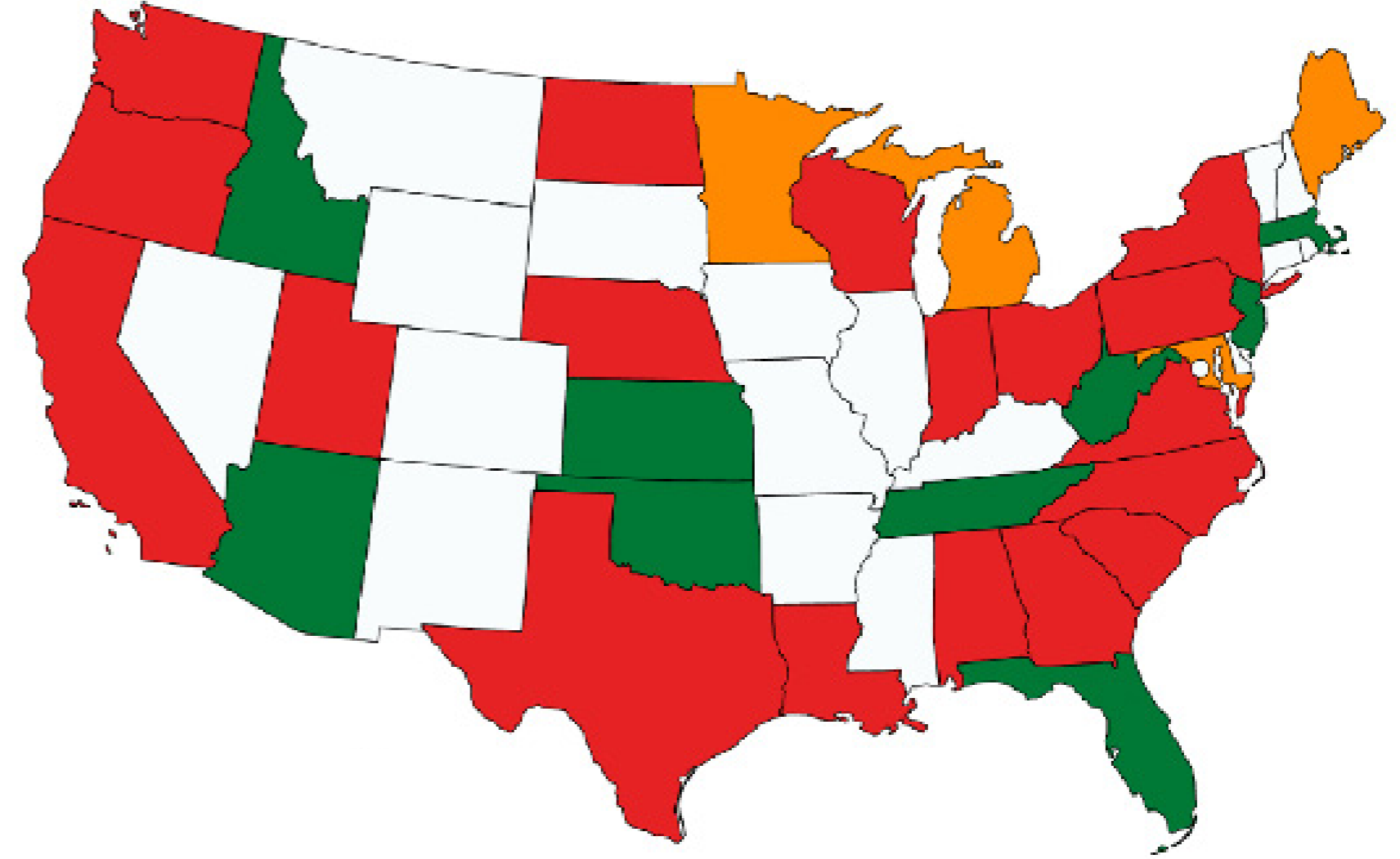


NATIONWIDE DATA

31 STATES

220+ FACILITY SURVEYS

- 1-3 SURVEYS
- 4-5 SURVEYS
- 6+ SURVEYS



WHY IS BENCHMARKING IMPORTANT?

BENCHMARKING IS THE BEST WAY TO KNOW HOW YOUR COMPANY'S OPERATIONAL COMPETITIVENESS IS POSITIONED AND HOW TO GET TO THE TOP RANK BY ALLOWING PARTICIPANTS TO:



JUSTIFY COSTLY OPERATIONAL IMPROVEMENTS

Evaluate the impact of best practices and new technology



QUICKLY IDENTIFY INDUSTRY TRENDS

Identify your positioning, strengths, and weaknesses



INCREASE SUPPLY CHAIN PROFITABILITY

Reduce operating costs by implementing best-practices



UNCOVER IMPROVEMENT OPPORTUNITIES

Eliminate inefficiencies by scrutinizing activities



ENHANCE INTERNAL PRODUCTIVITY MONITORING

Benchmark your productivity level throughout the year

GROCERY INDUSTRY CONSOLIDATION CREATING NEW PRODUCTIVITY CHALLENGES

HAVING ESTABLISHED BENCHMARKS CAN HELP

The grocery industry has seen its fair share of consolidation in recent years due to a growing number of mergers and acquisitions among large industry players. Primarily utilized as a vehicle for immediate expansion for growing organizations, consolidation can pose significant distribution challenges that cannot be ignored.

Most operations will avoid the shock of consolidation by maintaining status quo as long as possible. Over time, however, a significant amount of change is sure to occur. This could mean a change in incoming and outgoing volumes, item variety, delivery locations (customers), personnel, systems, and even processes and methodologies. With all this operational change, it's hard to keep productivity levels consistent.

The one thing that should be consistent throughout all of this change is your paid labor productivity benchmark. In the aviation industry, pilots flying under suboptimal weather use what's called an attitude indicator to ensure the wings are always level to the horizon. A distribution operation's attitude indicator is its labor productivity benchmark.

Through the establishment of benchmarks in all direct labor areas operators maintain profitability by ensuring that productivity rates remain constant, or improve, even as market demands change.



PERSONALIZED SHOPPING EXPERIENCES

PERSONALIZATION IS BECOMING LESS OF A TREND, AND MORE OF A STANDARD IN MANY INDUSTRIES. PERSONALIZED SHOPPING IS THE GROCERY INDUSTRY TAKES THE FORM OF CUSTOMIZABLE ADS AND PROMOTIONS. THIS IS DISRUPTING CONVENTIONAL METHODOLOGY AND PROVIDING CHALLENGES WHEN FORECASTING RETAIL DEMAND.

DEMAND FOR FRESH / ORGANIC PRODUCTS

CONSUMER DEMAND DICTATES VOLUME AND VARIETY SHIPPED. IN THIS CASE OF FRESH AND ORGANIC PRODUCTS, IT ALSO DICTATES STORAGE REQUIREMENTS, AND STORE SERVICE LEVEL.

QUALITY OVER QUANTITY

TODAY'S CONSUMER IS MORE HEALTH CONCIOUS AND PREFERS QUALITY OVER QUANTITY. THIS WILL ULTIMATELY PUT PRESSURE ON BUYERS AND QUALITY CONTROL PERSONNEL. ANY LOSS OF MARGIN WILL PUT PRESSURE ON THE BOTTOM LINE COST PER CASE OF DISTRIBUTION.

CONVENIENCE

PRIMARILY AT THE RETAIL LEVEL, SHOPPING CONVENIENCE IS PARAMOUNT, AND ALWAYS HAS BEEN. WITH MORE ORGANIATIONS EXPLORING OMNI-CHANNEL, DISTRIBUTION OPERATIONS ARE HAVING TO ADJUST.



MARKET LANDSCAPE | COMPETITION

CONSOLIDATION

WITH CONSOLIDATION CAUSING INDUSTRY DISRUPTION ON ALMOST A MONTHLY BASIS, OPERATIONS ARE HAVING TO CONSIDER SHIFTING VOLUMES REGIONALLY, ADDED SKU VARIETY, AND EVEN NETWORK ADJUSTMENTS. THIS CONTINUED CONSOLIDATION FORCES THE EVER GROWING PLAYERS TO EVALUATE THEIR ABILITY TO REMAIN NIMBLE TO ADJUST TO THE REQUIREMENTS OF AN EVOLVING CONSUMER MARKET.

TECHNOLOGY ADOPTION & INNOVATION

TECHNOLOGY ADOPTION HAS DIFFERENT IMPLICATIONS. ON ONE LEVEL, IT CAN PROVIDE NEW OPPORTUNITIES MADE POSSIBLE BY ONLINE SHOPPING. IT COULD ALSO MEAN DISTRIBUTION TECHNOLOGY SUCH AS OPTIMIZATION SYSTEMS AND AUTOMATED MATERIAL HANDLING SOLUTIONS WHICH CAN ASSIST IN IMPLEMENTING A SUCCESSFUL OMNI-CHANNEL STRATEGY. WHETHER THE END GOAL IS CONSUMER SATISFACTION, OR REDUCED COST PER CASE THROUGH PRODUCTIVITY GAINS, TECHNOLOGY ADOPTION AS A WAY TO IMPROVE IS AT AN ALL-TIME HIGH AS IS EXPECTED TO INCREASE EXPONENTIALLY.

OMNI-CHANNEL

OMNI-CHANNEL IS NOTHING NEW TO THE MAJORITY OF CONSUMER GOODS DISTRIBUTORS; HOWEVER, THE GROCERY INDUSTRY HAS ONLY RECENTLY BEEN ABLE TO EFFECTIVELY EXECUTE ON THIS STRATEGY. TECHNOLOGY AND INNOVATION HAVE MADE IT RELATIVELY EASY FOR GROCERY ORGANIZATIONS TO MOVE INTO THE REALM OF ONLINE SHOPPING, BUT IT HAS PROVEN CHALLENGING FOR THE VAST MAJORITY OF DISTRIBUTION OPERATIONS. MAINTAINING HIGH LEVELS OF PRODUCTIVITY WHILE SERVING THE OMNI-CHANNEL IS ONE OF THE MAIN CHALLENGES IN THE INDUSTRY TODAY.

THE VALUE OF GOOD DATA

WITH AN ABUNDANCE OF DATA OUT THERE, DIFFERENTIATING BETWEEN **GOOD** AND **QUESTIONABLE DATA** CAN BE DIFFICULT.

ESPECIALLY WITHOUT A PROPER REFERENCE POINT.

Evidenced throughout year of benchmarking studies is the fact that **data is abundant**. Large or small, distribution operations generate more data than executives care to know about. Some of it is useful, and some of it is not, but it is there and it is telling a story waiting to be told.

The key to a relevant story with an actionable conclusion is **organization**. This organization of data is what produces a reference point for comparison. Once organized, the focus is applied to what's important. Financial data, for example, is rarely used when looking at productivity metrics. Cost per case, the bottom line of your operation, should have a clear inverse correlation with your productivity.

IT'S EASY TO PAINT A BIG PICTURE, BUT DOES THAT HELP YOU TRACK MICRO-IMPROVEMENTS?

THE QUICK ANSWER IS NO.

Big data is not just about painting a macro picture, it's about aggregating micro-conclusions. The difference is in the details. Understand the story before trusting the conclusion.



ORGANIZING YOUR DATA

SEPARATING TEMPERATURE ZONES

The first thing to consider, when evaluating productivity in a multi-temperature facility, is separating the data by temperature zone. In the vast majority of cases, temperature zones are quite different, not only in the sense of personnel, but in the sense of physical racking, material handling equipment, and even technology. Understanding how these differences contribute to your productivity score is the first step in identifying gaps and opportunities.

DIRECT VS. INDIRECT FUNCTIONS

In this study, job functions are split up into two categories: **direct and indirect**.

When considering productivity, as it relates to actual pallets and cases moved per hour, only direct job functions like receiving, moving stock, selection, loading and shipping are the focus of this report. Splitting the analysis into these categories is the first step in being able to isolate areas of improvement.

Job functions are often shared among facility personnel. When this happens, tracking productivity accurately can be difficult, especially when direct functions blend with indirect functions. The best way to avoid confusion is to keep paid hours organized by individual and not by function. This way, paid hours can be properly prorated between the jobs performed by individual operators.

TIP

PAID HOURS VS. WORKED HOURS

This study asked for both worked and paid hours for each direct and indirect job function. As productivity should always be looked at in terms of its influence on the overall cost per case, the focus of this study is on paid hours. In some extreme cases, paid hours per function can be up to 30% greater than worked hours for the same function. Using worked hours as a reference point will disconnect productivity metrics from cost per case thus significantly inflating productivity rates.

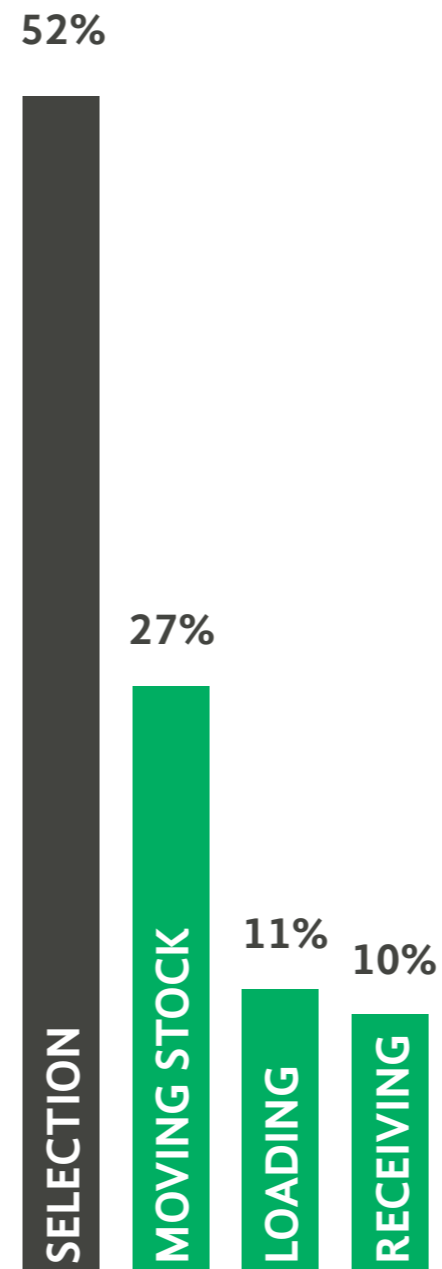
RETAIL VS. WHOLESALE

WHAT ARE THE MOST IMPORTANT PRODUCTIVITY METRICS?

DIRECT LABOR RATE | SELECTION RATE

As cases per hour, and pallets per hour are the norm when judging operational productivity, this analysis looks exclusively at direct labor functions like selection, loading, receiving and moving stock. By looking at the combined productivity of these functions, it is possible to obtain a direct labor rate.

Looking more closely at the distribution of paid hours across all direct labor functions, we find selection hours make up **52%** of the total. As a result, keeping a close eye on selection rates, as a gauge of bottom-line productivity, is highly recommended.



STUDY POPULATION COMPARISON & CONTRAST

RETAIL VS. WHOLESALE



Although the methodology behind this productivity study has been in practice for many years, this is the first year that the retail participant population matched the wholesale population (by facility) in a comprehensive way.

	RETAILERS	WHOLESALE
SURVEYS	50%	50%
AVERAGE WEEKLY CASES SHIPPED	1,857,997	727,488
AVERAGE FACILITY SIZE (CU.FT.)	760,915	554,560
AVERAGE CLEAR HEIGHT (FT.)	30.5	30.5
AVERAGE WEEKS ON HAND	1.9	3.7
AVERAGE SKU VARIETY	20,209	21,655
AVERAGE LOCATIONS SERVED	160	448
AVERAGE WEEKLY ORDERS SHIPPED	930	2,155
AVERAGE ORDER SIZE (CASES)	1,998	338

* FULL-LINE FIGURES | EXCLUDING GMHBC

NON-CONTROLLABLE FACTORS

OPERATION VOLUMES

LABOR RELATIONS

SKU VARIETY & ORDER SIZE

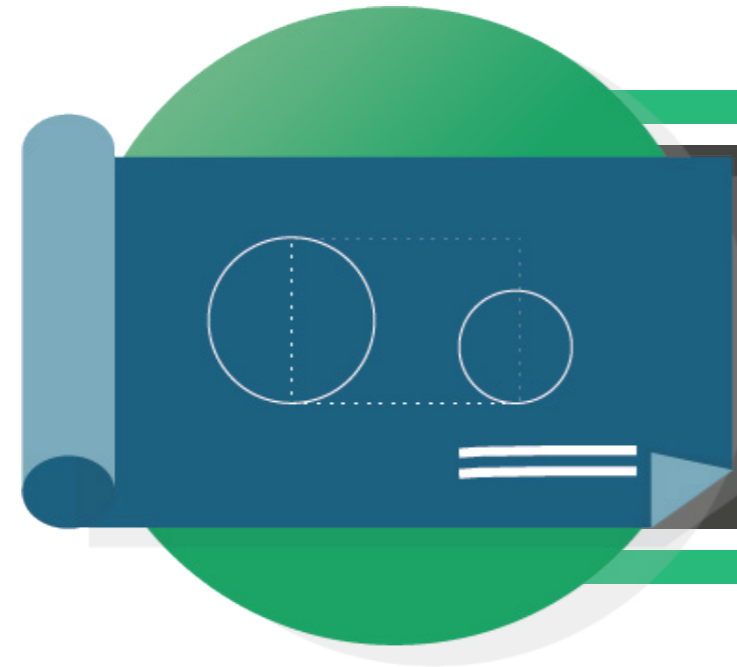
CONTROLLABLE FACTORS

MATERIAL HANDLING

FACILITY SIZE & LAYOUT

APPLICATION OF TECHNOLOGY

PRACTICES & PROCESSES



WHAT'S DRIVING YOUR PRODUCTIVITY?

NON-CONTROLLABLE FACTORS

OPERATION VOLUMES

Conventional wisdom suggests that a higher case volume facility will have higher productivity numbers. The short answer is: it should, but it's not a perfect correlation. Higher case volumes do provide leverage, if the correct material handling equipment, and best practices are in place; however, it does not automatically improve productivity metrics.

To a distribution operation, inbound and outbound case volumes are classified as non-controllable factors; however, there are ways an organization can adjust its distribution network to suit the level and type of case movement of certain facilities within the network. Retailers tend to look at fast/slow set-ups, which is when a network (or facility) is organized based on SKU movement. Fast moving SKUs, which can be picked more efficiently, are grouped in separate facilities whereas slower moving items are consolidated into centralized facilities.

SUMMARY | AVERAGE WEEKLY TOTALS

	RETAIL	WHOLESALE
WEEKLY CASES SHIPPED		
DRY GROCERY	574,653	351,963
COOLER	345,853	226,943
FREEZER	131,836	83,193
WEEKLY CASES ON HAND		
DRY GROCERY	1,178,640	679,705
COOLER	705,956	376,696
FREEZER	266,032	178,562
WEEKLY ORDERS SHIPPED		
DRY GROCERY	831	1,753
COOLER	1,242	2,031
FREEZER	885	982
LOCATIONS SERVICED		
DRY GROCERY	166	389
COOLER	169	358
FREEZER	161	361

WEEKLY CASES SHIPPED

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 351,963 RETAIL 574,653

	ABOVE AVERAGE		BELOW AVERAGE	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Receiving Rate Paid	944	1,255	838	706
Average Moving Stock Rate Paid	759	704	711	554
Average Selection Rate Paid	195	145	194	136
Average Loading Rate Paid	1,087	870	1,352	748
Average Shipping Rate Paid	164	120	181	112
Average Direct Labor Rate Paid	101	79	99	64

* All values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.

In both sectors, a higher volume of cases shipped does seem to contribute to a more productive operation - when looking at case per hour rates for both selection and overall direct labor - as it does provide leverage when it comes to implemented best practices when a certain scale is reached. This productivity increase is more pronounced.

WEEKLY CASES ON HAND

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 679,705 RETAIL 1,178,640

	ABOVE AVERAGE		BELOW AVERAGE	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Receiving Rate Paid	956	1,168	843	824
Average Moving Stock Rate Paid	776	565	699	445
Average Selection Rate Paid	195	145	194	136
Average Loading Rate Paid	1,005	857	1,299	763
Average Shipping Rate Paid	166	119	180	112
Average Direct Labor Rate Paid	102	77	98	62

* All values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.

In both sectors, a higher volume of cases on hand seem to contribute to a more productive operation - when looking at case per hour rates for both selection and overall direct labor. Operating with high inventory turns tends to make order fulfillment more challenging and highly sensitive to the level of synchronization between vendors and customers. On the flip side, operating a facility at or near capacity will negatively impact productivity.

WEEKLY ORDERS SHIPPED

LOCATIONS SERVICED

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 1,753 RETAIL 831

	ABOVE AVERAGE		BELOW AVERAGE	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	624,453	382,255	555,964	335,715
Average Weekly Cases Shipped	653,162	379,959	575,059	335,829
Average Weekly Cases Handled	1,289,775	780,401	1,138,230	680,053
Average Receiving Rate Paid	1,098	1,312	803	1,142
Average Moving Stock Rate Paid	697	492	694	639
Average Selection Rate Paid	181	136	200	142
Average Loading Rate Paid	1,244	580	1,245	1,070
Average Shipping Rate Paid	160	107	179	120
Average Direct Labor Rate Paid	101	67	101	73

** All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.*

In both sectors, a lower volume of weekly orders shipped appears to contribute to a higher level of selection productivity, showing as much as a 10% difference. On average, Wholesalers ship substantially more orders per week than their retail counterparts. The higher the number of weekly orders shipped, the higher the shipping complexity.

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 389 RETAIL 166

	ABOVE AVERAGE		BELOW AVERAGE	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	716,631	489,177	482,406	280,561
Average Weekly Cases Shipped	741,074	476,987	503,207	286,364
Average Weekly Cases Handled	1,476,070	975,291	999,181	584,526
Average Receiving Rate Paid	837	803	843	695
Average Moving Stock Rate Paid	827	513	716	596
Average Selection Rate Paid	200	160	198	151
Average Loading Rate Paid	987	710	1,035	717
Average Shipping Rate Paid	165	126	167	122
Average Direct Labor Rate Paid	100	77	98	74

** All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.*

The productivity gains shown appear to be more a product of operations with higher weekly case volumes as opposed to having a relationship with the amount of locations serviced.

NON-CONTROLLABLE FACTORS

LABOR RELATIONS

The data from the study sample suggests that wholesalers have a higher rate of organized labor than their retail counterparts - it's almost a constant inverse 60/40 relationship across all temperature zones. Despite a perception that non-unionized environments are more productive, the difference between the two in our study sample is small in terms of productivity. In fact, unionized environments were found to be more productive, not just in selection, but in overall direct labor productivity.

One factor in favor of unionized environments, is that, although the hourly wage would typically be expected to be higher, employees tend to have longer job tenure. This usually translates into fewer trainees and a more consistent productivity rate across all employees.

An important consideration pertaining to direct productivity is that, while unionized environments show as being more productive, a higher rate of technology and automation adoption could be what drives the productivity increase.

ADOPTON RATES

UNION VS. NON-UNION	RETAIL		WHOLESALE	
	UNION	NON-UNION	UNION	NON-UNION
DRY GROCERY	39%	61%	64%	36%
COOLER	31%	69%	62%	38%
FREEZER	34%	66%	65%	35%

UNION VS. NON-UNION

DRY GROCERY

	UNIONIZED		NOT UNIONIZED	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	561,606	409,857	582,808	255,950
Average Weekly Cases Shipped	585,441	402,857	602,404	261,484
Average Weekly Cases Handled	1,160,245	825,934	1,190,139	528,104
Average Receiving Rate Paid	911	1,088	863	1,265
Average Moving Stock Rate Paid	640	631	792	599
Average Selection Rate Paid	202	142	191	138
Average Loading Rate Paid	1,402	1,043	1,198	858
Average Shipping Rate Paid	181	116	170	115
Average Direct Labor Rate Paid	101	71	100	71

* All rate values reflected in cases per paid labor hour.
 * Excluding fully-automated facilities.

Unionized facilities, across all three temperature zones, and both sectors, show higher productivity rates. Organized labor in itself is not expected to directly contribute to higher productivity rates; however, the data suggests that this non-controllable factor does not negatively affect the operation in terms of direct labor productivity.

UNION VS. NON-UNION

COOLER

	UNIONIZED		NOT UNIONIZED	
	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	595,255	305,178	235,008	155,715
Average Weekly Cases Shipped	592,522	258,044	238,043	156,449
Average Weekly Cases Handled	1,221,264	571,543	476,931	316,184
Average Receiving Rate Paid	1,011	964	741	890
Average Moving Stock Rate Paid	741	812	856	702
Average Selection Rate Paid	213	149	188	125
Average Loading Rate Paid	1,054	1,065	1,093	893
Average Shipping Rate Paid	180	127	164	106
Average Direct Labor Rate Paid	99	81	98	65

* All rate values reflected in cases per paid labor hour.
 * Excluding fully-automated facilities.

UNION VS. NON-UNION

FREEZER

UNIONIZED

NOT UNIONIZED

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	152,845	92,846	121,333	66,377
Average Weekly Cases Shipped	153,250	92,667	123,536	65,704
Average Weekly Cases Handled	307,687	189,703	245,205	132,522
Average Receiving Rate Paid	814	1,557	751	805
Average Moving Stock Rate Paid	589	508	772	527
Average Selection Rate Paid	179	140	175	128
Average Loading Rate Paid	1,517	1,016	1,041	698
Average Shipping Rate Paid	169	117	151	103
Average Direct Labor Rate Paid	92	70	92	64

* All rate values reflected in cases per paid labor hour.



NON-CONTROLLABLE FACTORS

SKU VARIETY & ORDER SIZE

As conventional operations do not have significant control over SKU variety or order sizes they must adapt. Both metrics, SKU variety and average order size, vary depending on the sector - retailers tend to have fewer SKUs, but larger order sizes, while wholesalers have the opposite. This is due in part to the average retailer having far more control over its distribution than the average wholesale operation. There are unique challenges to each situation, however, and both sectors are forced to adapt.

Self-distributing retailers typically mostly service their own locations, and while a lot of SKUs are added for competitive reasons, the variability of volumes per store is usually more predictable and manageable. A wholesale distribution operation, on the other hand, services its clients locations, whether it's street level locations, or other distribution centers, the spectrum of goods tends to be much greater, as multiple retailers, with different types of products, are being serviced. While being non-controllable factors, wholesalers that strive to decrease SKU count and increase order size, can see a sizable productivity benefit.

SUMMARY | AVERAGE WEEKLY TOTALS

	RETAIL	WHOLESALE
ACTIVE SKUS		
DRY GROCERY	8,874	11,861
COOLER	2,294	4,146
FREEZER	2,049	3,295
CASES SHIPPED PER SKU		
DRY GROCERY	67	37
COOLER	172	59
FREEZER	70	29
SQUARE FOOT PER SKU		
DRY GROCERY	97	57
COOLER	367	36
FREEZER	431	142
ORDER SIZE		
DRY GROCERY	1,190	313
COOLER	438	157
FREEZER	277	118

ACTIVE SKUS

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 11,861 RETAIL 8,874

ABOVE AVERAGE **BELOW AVERAGE**

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	616,305	433,079	518,264	314,541
Average Weekly Cases Shipped	647,313	433,198	530,154	311,683
Average Weekly Cases Handled	1,274,488	880,557	1,053,123	637,223
Average Receiving Rate Paid	873	1,435	877	997
Average Moving Stock Rate Paid	773	718	679	569
Average Selection Rate Paid	189	147	202	138
Average Loading Rate Paid	1,158	876	1,426	1,044
Average Shipping Rate Paid	166	120	186	114
Average Direct Labor Rate Paid	99	80	101	66

* All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.

Retailers in the study sample appear to be more sensitive to an increase in active SKUs as those with higher-than-average SKU variety see a negative impact in productivity as compared to those with a SKU variety below the average of the retailer sample.

CASES SHIPPED PER SKU

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 37 RETAIL 67

ABOVE AVERAGE **BELOW AVERAGE**

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	731,697	669,240	412,873	229,803
Average Weekly Cases Shipped	755,086	654,733	434,484	232,860
Average Weekly Cases Handled	1,494,955	1,331,479	854,037	476,251
Average Receiving Rate Paid	912	1,778	826	923
Average Moving Stock Rate Paid	792	626	680	605
Average Selection Rate Paid	199	153	192	135
Average Loading Rate Paid	1,203	1,217	1,317	893
Average Shipping Rate Paid	172	127	177	111
Average Direct Labor Rate Paid	104	79	95	67

* All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.

In both sectors, higher cases shipped per SKU or in other words, having faster moving items, translates into higher productivity numbers - more specifically, in total Direct Labor throughput where the difference is as great as 16% (wholesale).

DOES SKU VARIETY IMPACT FACILITY SQ. FT.?

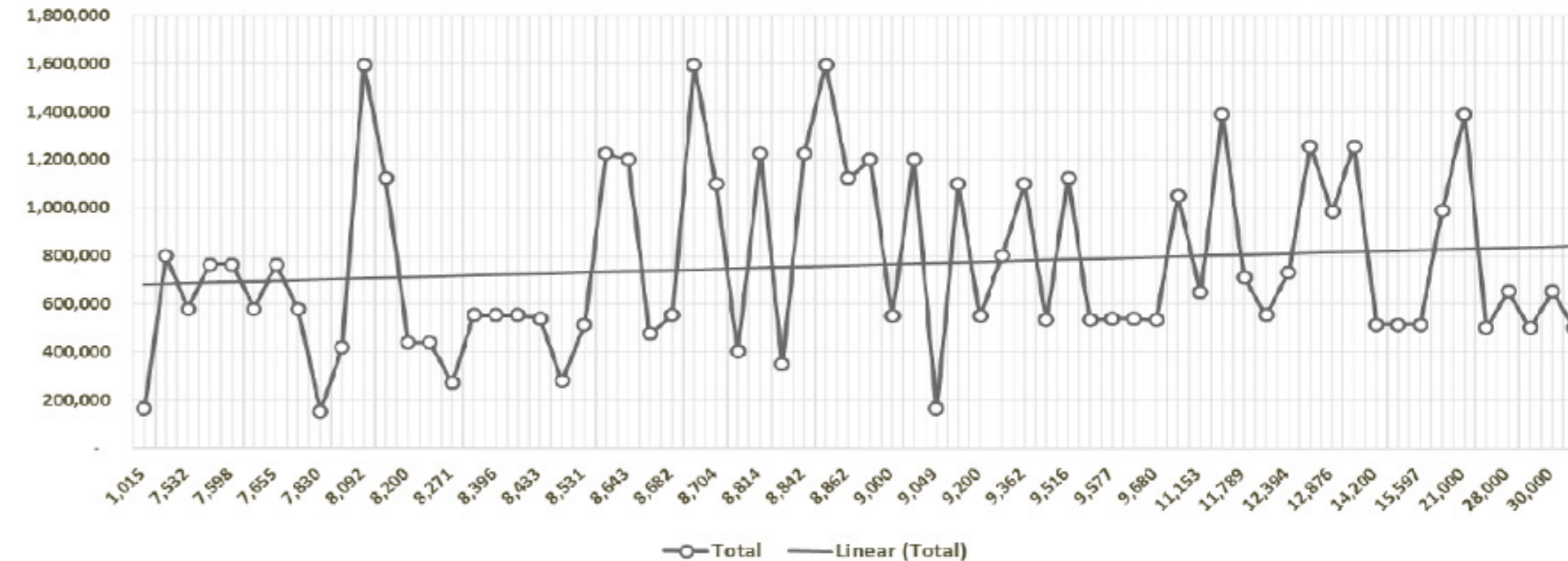
OUR FINDINGS INDICATE: NOT IN EVERY CASE.

In a perfect, fully-optimized world, a direct and clear correlation.

Due to the nature of infrastructure investments which are done with a design year typically 5 to 10 years out, facility sizes will vary based on relevant ranges of volume, inventory and SKU variety as growth is accrued. Furthermore, the overarching factor driving facility sizes will vary based on the operating environment. For example, for high turn environments such as Produce, the size will be driven by inbound and outbound volume and storage capacity will remain low.

With slower moving inventory, however, SKU variety will determine the sq. ft. if the facility is not of current design.

FACILITY SIZE (SQ. FT)



ACTIVE SKUS

SQUARE FOOT PER SKU

ORDER SIZE

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 57 RETAIL 97

ABOVE AVERAGE **BELOW AVERAGE**

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	638,725	315,298	523,487	442,381
Average Weekly Cases Shipped	669,283	313,793	535,089	433,628
Average Weekly Cases Handled	1,310,143	641,758	1,075,283	887,728
Average Receiving Rate Paid	777	785	1,043	749
Average Moving Stock Rate Paid	816	651	617	536
Average Selection Rate Paid	202	144	185	133
Average Loading Rate Paid	1,178	942	1,282	1,016
Average Shipping Rate Paid	172	117	177	111
Average Direct Labor Rate Paid	102	69	97	67

** All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.*

In both sectors, operators with more square footage per SKU see better productivity rates. This difference is most noticeable in order selection, where there's as much as an 8% difference.

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 313 RETAIL 1,190

ABOVE AVERAGE **BELOW AVERAGE**

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	539,875	593,851	589,760	241,573
Average Weekly Cases Shipped	559,450	594,460	610,944	237,942
Average Weekly Cases Handled	1,103,100	1,194,968	1,210,878	492,770
Average Receiving Rate Paid	871	882	831	840
Average Moving Stock Rate Paid	641	639	664	489
Average Selection Rate Paid	201	157	192	132
Average Loading Rate Paid	1,161	927	1,041	729
Average Shipping Rate Paid	195	130	163	109
Average Direct Labor Rate Paid	105	83	97	64

** All rate values reflected in cases per paid labor hour.
* Excluding fully-automated facilities.*

In both sectors, there is a positive correlation between productivity and order size. The bigger the order size, the better the productivity - most notably, in the Selection and Direct Labor categories. Larger order sizes provides operators with a greater amount of leverage in all outbound shipping categories. Order size is one of the more important differences between a wholesaler and retailer.

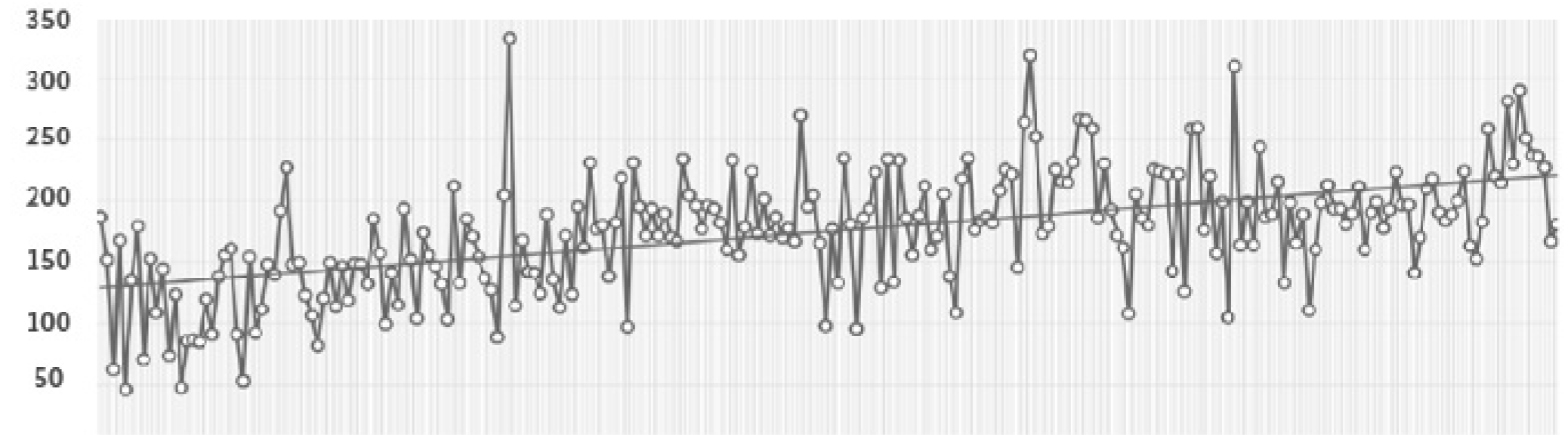
WHAT IMPACT DOES ORDER SIZE HAVE ON DIRECT LABOR THROUGHPUT?

THERE IS A CLEAR CORRELATION BETWEEN ORDER SIZE (CASES) AND DIRECT LABOR THROUGHPUT. AS THE AVERAGE CASES PER ORDER GROWS, SO DOES SELECTION PRODUCTIVITY.

Wholesalers have a greater challenge, and therefore have to carefully engineer and maintain their pick path to keep selection travel under control.

Selection travel also depends on the capacity of the mobile equipment being used for selecting orders.

CASES PER PAID HOUR



AVERAGE CASES PER ORDER

○ TOTAL — LINEAR (TOTAL)

CONTROLLABLE FACTORS

MATERIAL HANDLING

ONE SIZE DOES NOT FIT ALL - INNOVATE TO STAY AHEAD

Regardless of the size of the operation, sector or industry, material handling - fixed and mobile - is a critical factor driving direct labor productivity. Restrictions do exist, however, and with material handling equipment, these constraints usually surround space and investment. This study produced metrics around various types of material handling equipment, including full-scale automation, and if one thing was constant it's that one solution does not fit all.

Full-scale automation does, in the majority of cases, provide productivity rates that are otherwise unattainable; however, when looking at semi-automation, there's not always a positive correlation between cost and performance. Once a conventional facility has optimized its performance as much as possible, once volumes justify the investment, and staff possesses the level of buy-in that a fully automated solution requires, it's an option well worth exploring.

When it comes to racking, **conventional selective Single-Deep racks** - pallets stored a single load deep - are the most common, especially in retail environments. These racks provide easy access to every pallet stored and work well with conventional mobile equipment. **Double-Deep racks** - pallets are stored two loads deep (one behind the other) - are used sparingly. They tend to limit storage flexibility because not all pallets are accessible; however, a trade-off can sometimes be found when used in conjunction with high-volume items. **Push-Back racks** allow pallets to be pushed on a cart system during the loading process. They are typically more expensive than conventional racking, but are a great alternative to Double Deep racking with regards to forklift productivity. **Drive-in racks** allow lift trucks to drive right into the storage bay to place a pallet. They are simple, but with most simple solutions, there are trade-offs. They provide for very dense storage, but are very limiting in terms of item access - far less efficient than conventional Double Deep or Push-Back racking.

ADOPTION RATES

	RETAIL				WHOLESALE		
PRIMARY FIXED EQUIPMENT	SINGLE DEEP RACKING	DOUBLE-DEEP RACKING			SINGLE DEEP RACKING	PUSH-BACK RACKING	DRIVE-IN RACKING
DRY GROCERY	100%	0%			94%	6%	0%
COOLER	100%	0%			92%	6%	2%
FREEZER	97%	3%			86%	9%	5%
MOBILE EQUIPMENT		DOUBLE PALLET JACKS			SINGLE PALLET JACKS	DOUBLE PALLET JACKS	
DRY GROCERY		100%			6%	94%	
COOLER		100%			12%	88%	
FREEZER		100%			17%	83%	
MATERIAL HANDLING	CONVENTIONAL	MECHANIZED	SEMI AUTOMATED	FULLY AUTOMATED	CONVENTIONAL	MECHANIZED	SEMI AUTOMATED
DRY GROCERY	88%	8%	2%	2%	74%	18%	8%
COOLER	94%	0%	0%	6%	94%	6%	0%
FREEZER	100%	0%	0%	0%	97%	3%	0%

PRIMARY FIXED EQUIPMENT

SELECTION EQUIPMENT

* DRY GROCERY ONLY

	RETAIL	WHOLESALE	
	SINGLE DEEP RACKING	SINGLE DEEP RACKING	PUSH -BACK RACKING
Average Weekly Cases Received	574,654	358,143	296,598
Average Weekly Cases Shipped	595,880	355,671	293,868
Average Weekly Cases Handled	1,178,641	725,731	608,799
Average Receiving Rate Paid	836	400	286
Average Moving Stock Rate Paid	710	542	1,150
Average Selection Rate Paid	195	139	163
Average Loading Rate Paid	1,063	840	639
Average Shipping Rate Paid	174	115	129
Average Direct Labor Rate Paid	100	65	72

* All rate values reflected in cases per paid labor hour.

Single deep racking is dominant in both sectors - as the primary fixed equipment. A small number of Wholersalers reported using push-back racking as their primary fixed equipment, and the productivity gains are quite significant in both moving stock (forklift) and order selection. These gains would be expected in the retail sector as well. If the ROI makes sense, push-back racking could be the difference between an above average operation and a best-in-class (top 10%) operation.

* DRY GROCERY ONLY

	RETAIL	WHOLESALE	
	DOUBLE PALLET JACKS	SINGLE PALLET JACKS	DOUBLE PALLET JACKS
Average Weekly Cases Received	574,654	380,566	337,766
Average Weekly Cases Shipped	595,880	396,456	333,308
Average Weekly Cases Handled	1,178,641	777,154	684,871
Average Receiving Rate Paid	881	314	1,099
Average Moving Stock Rate Paid	732	727	585
Average Selection Rate Paid	195	117	146
Average Loading Rate Paid	1,272	957	953
Average Shipping Rate Paid	174	100	117
Average Direct Labor Rate Paid	100	61	72

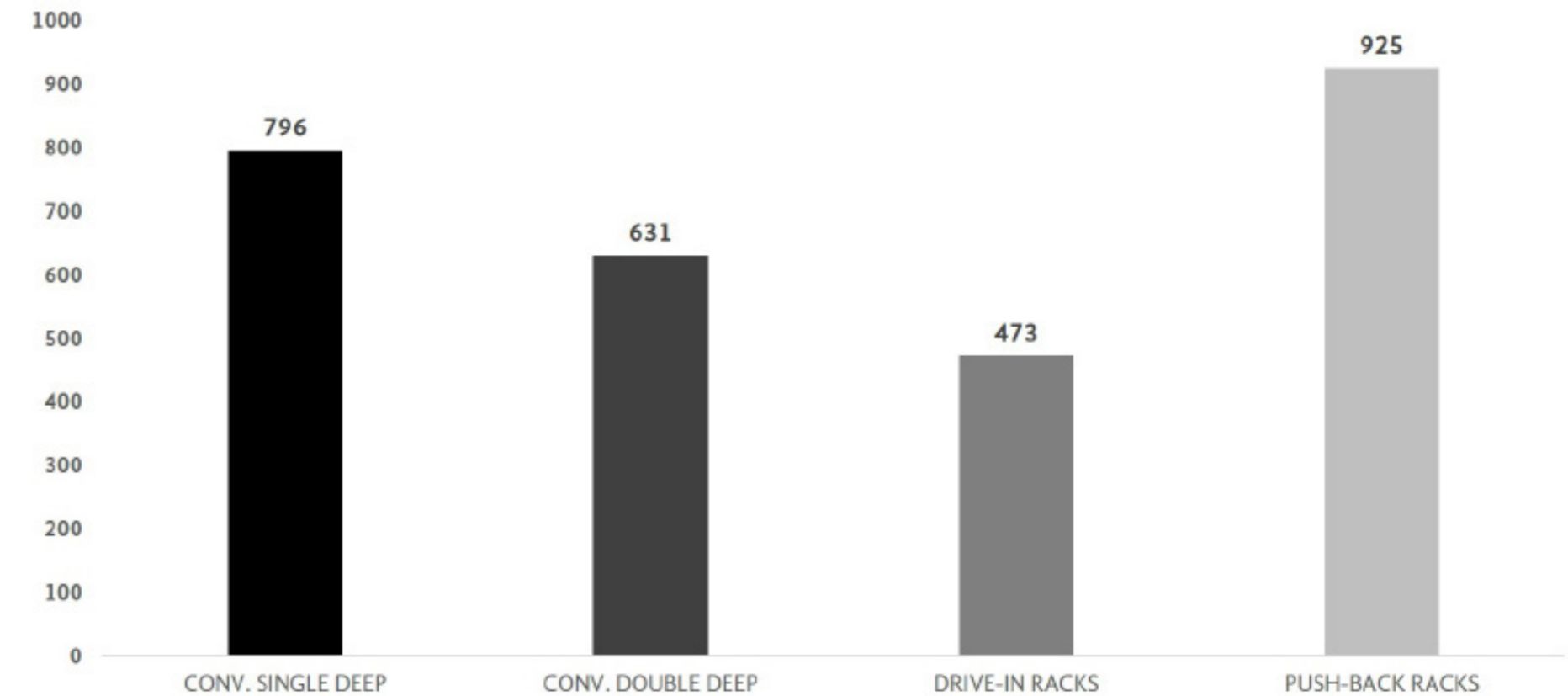
* All rate values reflected in cases per paid labor hour.

Double pallet jacks are the standard, regardless of the sector. No retailers, and only 6% of wholesalers, report using anything else in Dry Grocery. The difference in order selection productivity, between a double and a single pallet jack, is 22%. If size restrictions are non-existent, double pallet jacks are the standard for order selection.

SELECTIVE SINGLE DEEP RACKS PROVIDE THE HIGHEST LEVEL OF FORKLIFT PRODUCTIVITY FOR CONVENTIONAL RACKING.

FOR FAST MOVING ITEMS, HOWEVER, IT MAKES SENSE TO CONSIDER THE ROI OF PUSH BACK RACKING AS THEY PROVIDE MUCH HIGHER FORKLIFT PRODUCTIVITY.

MOVING STOCK (FORKLIFT) RATE | CASES PER PAID HOUR

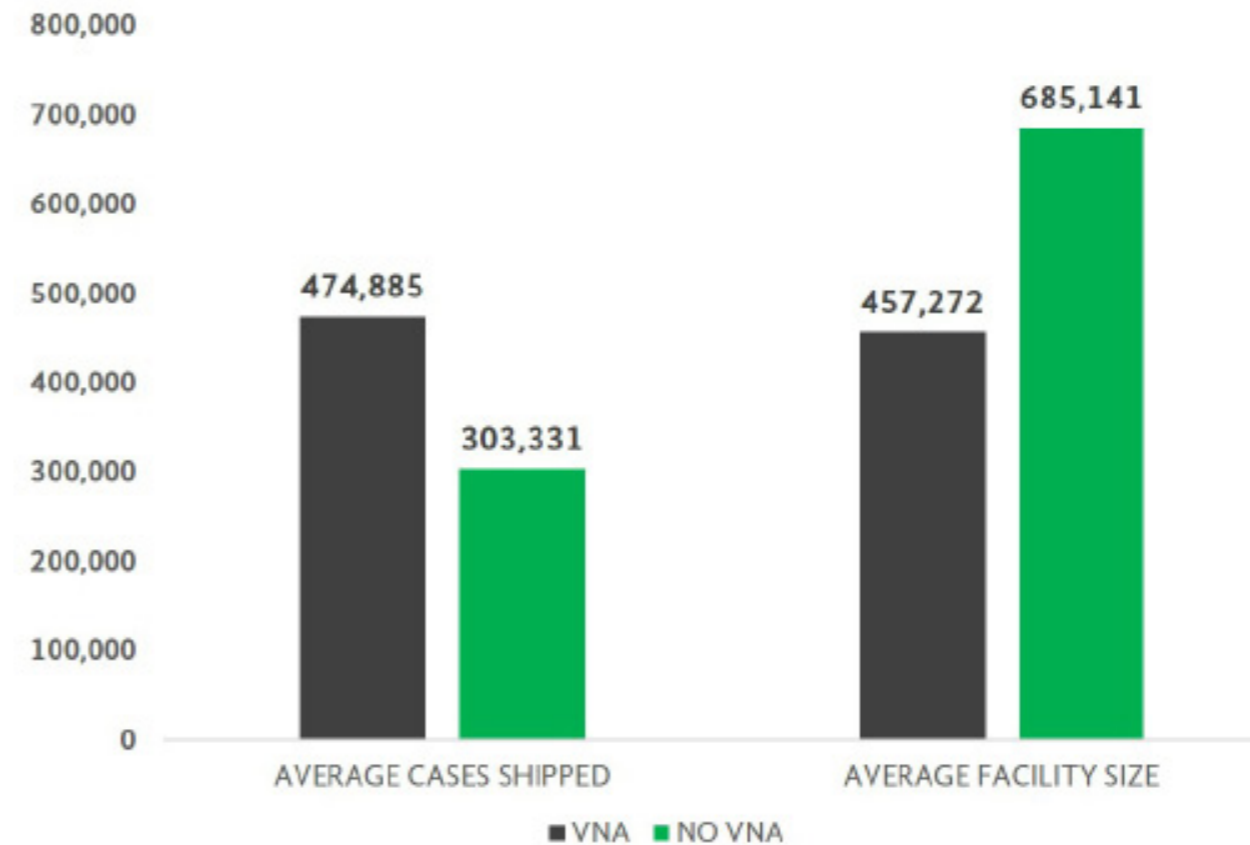


VERY NARROW AISLE (VNA)

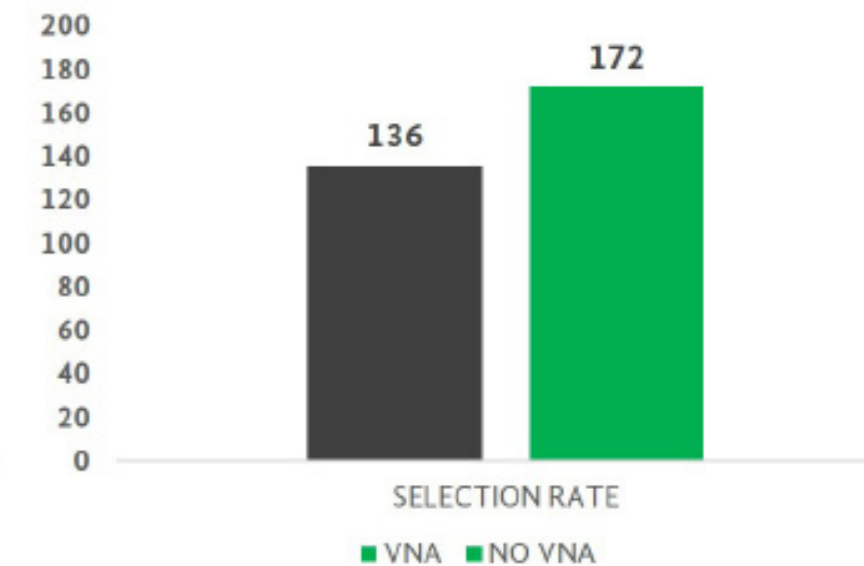
WHILE VNA PROVIDES 21% LESS PRODUCTIVITY, THE AVERAGE OPERATOR USING IT IS ABLE TO SHIP 57% MORE VOLUME IN 2/3 OF THE SPACE OF THOSE WHO DON'T HAVE IT.

For some operators, cap-ex avoidance can off-set productivity losses, the key to avoid turning a VNA area into a bottleneck lies in the items in them. Typically slow-moving and low-inventory items are good candidates.

FACILITY SQUARE FEET / AVERAGE WEEKLY CASES SHIPPED



CASES PER PAID HOUR



CONTROLLABLE FACTORS

SUMMARY | AVERAGES

FACILITY SIZE & LAYOUT

FOR MOST, THE SIZE OF A FACILITY IS, TO AN EXTENT, CONTROLLABLE - EITHER FROM THE INITIAL SET-UP OR THROUGH ADDING EXPANSION AREAS WHEN REQUIRED. THE LAYOUT WITHIN THE FACILITY SHOULD **ALWAYS** BE CONTROLLABLE, AND DOES PLAY A CRITICAL ROLE IN MAINTAINING A HIGH LEVEL OF PRODUCTIVITY.

The total footprint (typically shown in square feet), and clear stacking height (typically shown in feet) are two common metrics when looking at the physical sizing of a facility. Once it's deemed a building is at full capacity (there are many ways to determine this), there are three courses of action an operator can consider: do nothing, expand or alter the layout, or look for additional cross-docking opportunities.

If nothing is done, the operator may lose the ability to optimally slot items, resulting in unorganized item sequencing, increased travel, replenishment activity and aisle congestion - both negatively affecting selection productivity, among other things.

A plan to address the problem always has to begin with identifying what kind of capacity problem it is and where it's occurring within the facility. Is there a shortage of pick locations? a rack shortage? an overall space issue in all departments? **Whatever the problem may be, a re-slot of the facility or a specific temperature zone may be all that is required. Physical expansion is necessary sometimes, but there are other options to be considered.**

	RETAIL	WHOLESALE
TEMPERATURE ZONE FOOTPRINT		
DRY GROCERY	846,607	674,611
COOLER	1,069,490	1,058,490
FREEZER	690,664	543,794
CLEAR STACKING HEIGHT		
DRY GROCERY	31.7	30.9
COOLER	29.5	29.7
FREEZER	30.8	31.7

TEMPERATURE ZONE FOOTPRINT

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 674,611 RETAIL 846,607

ABOVE AVERAGE

BELOW AVERAGE

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	647,583	322,709	510,388	416,067
Average Weekly Cases Shipped	672,154	322,112	521,113	409,910
Average Weekly Cases Handled	1,321,288	659,676	1,045,236	833,321
Average Receiving Rate Paid	780	811	975	900
Average Moving Stock Rate Paid	823	710	669	465
Average Selection Rate Paid	202	144	188	134
Average Loading Rate Paid	1,165	811	1,465	1,324
Average Shipping Rate Paid	172	118	178	112
Average Direct Labor Rate Paid	102	72	100	69

** All rate values reflected in cases per paid labor hour.*

In conventional Dry Grocery set-ups, there is a positive correlation between facility size (sq. ft.) and overall productivity; however, having a larger facility by no means guarantees better productivity numbers. Larger facilities, if not slot-
ted properly may increase selection travel and therefore significantly reduce productivity.

CLEAR STACKING HEIGHT

* DRY GROCERY ONLY

AVERAGE | WHOLESALE 30.9 RETAIL 31.7

ABOVE AVERAGE

BELOW AVERAGE

	RETAIL	WHOLESALE	RETAIL	WHOLESALE
Average Weekly Cases Received	578,309	496,444	568,127	238,330
Average Weekly Cases Shipped	596,192	488,490	595,322	238,550
Average Weekly Cases Handled	1,182,002	993,432	1,172,640	494,477
Average Receiving Rate Paid	858	1,562	925	749
Average Moving Stock Rate Paid	685	741	813	557
Average Selection Rate Paid	196	149	192	123
Average Loading Rate Paid	1,381	1,278	1,082	793
Average Shipping Rate Paid	179	124	164	104
Average Direct Labor Rate Paid	100	78	101	64

** All rate values reflected in cases per paid labor hour.*

Overall, retailers tend to have taller facilities, and the majority of retailers are higher than the average. Wholersalers tend to have shorter facilities; however, those that report having taller buildings also report stronger productivity numbers in every Direct labor function.

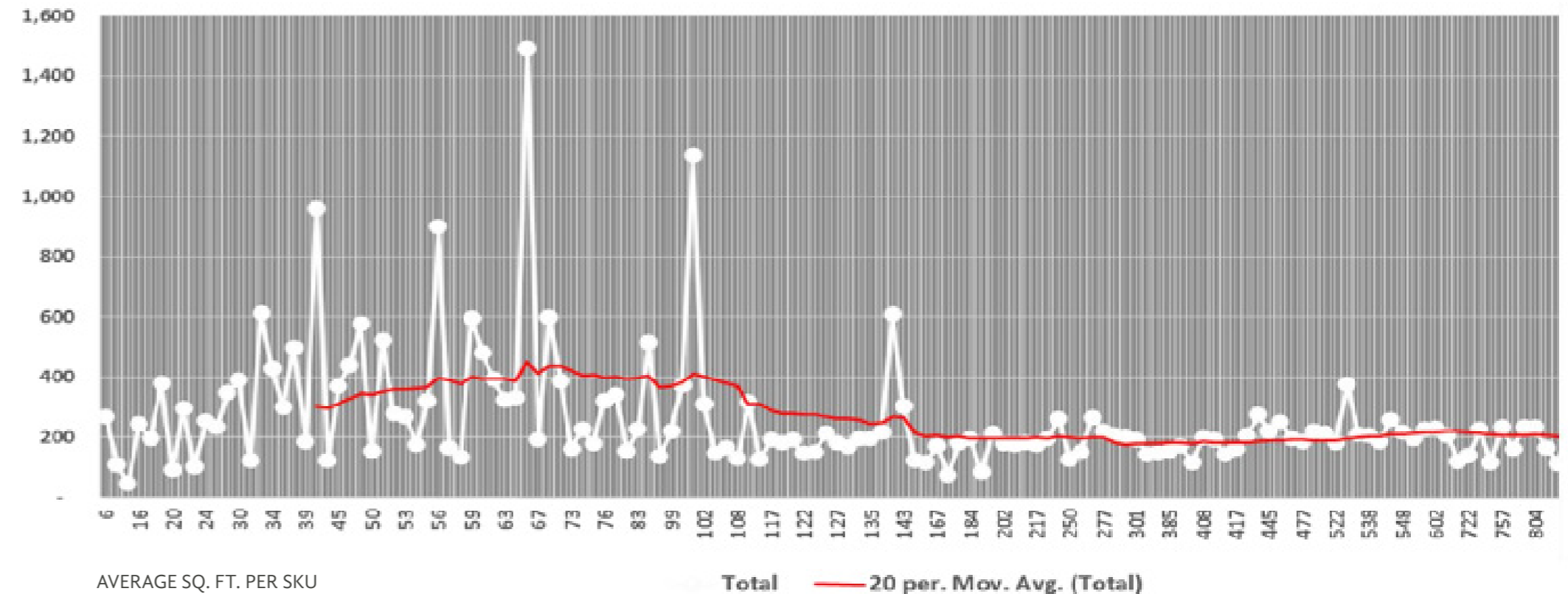
SELECTION PRODUCTIVITY VS. SQ. FT. PER SKU

SPACE ALLOCATION SEEMS TO INCREASE PRODUCTIVITY ONLY BELOW 180 SQ. FT. / SKU.

THIS HIGHLIGHTS THE IMPORTANCE OF PICK PATH OPTIMIZATION.

Beyond 180 Sq. Ft / SKU, not only does productivity remain flat, but it remains flat at a low level. The moving average suggests that, in a conventional operation, productivity is at its highest when the ratio of Sq. Ft. / SKU is between 60 and 100.

CASES PER PAID HOUR



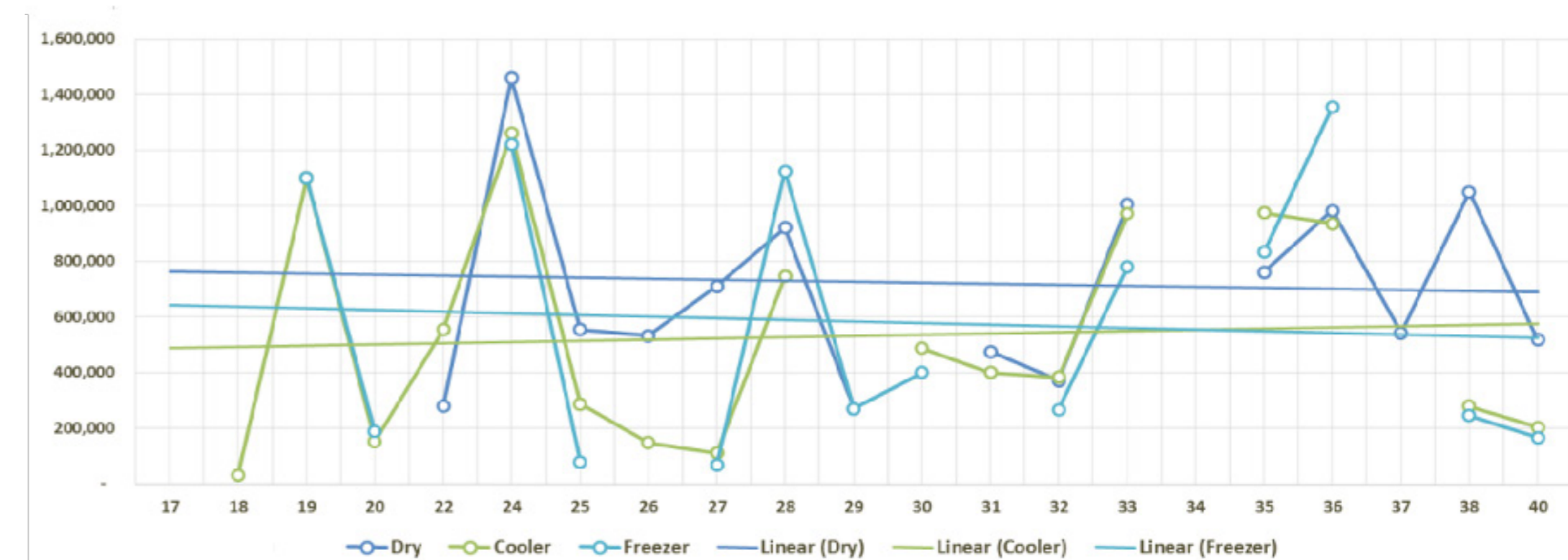
DOES CLEAR BUILDING HEIGHT IMPACT FOOTPRINT?

FACILITY HEIGHT HELPS REDUCE FOOTPRINT IN ENVIRONMENTS WITH LOW INVENTORY TURNS SUCH AS DRY AND FREEZER.

In these cases, the taller the building, the smaller the footprint.

That is not the case for coolers, however, as higher inventory turns require product to be readily available for picking.

AVERAGE BUILDING SQ. FT.



CLEAR BUILDING STACKING HEIGHT

CONTROLLABLE FACTORS

APPLICATION OF TECHNOLOGY

CONVENTIONAL TECHNOLOGY NO LONGER OFFERS A PRODUCTIVITY ADVANTAGE.

IT'S TIME TO BEGIN LOOKING AT OTHER OPTIONS.

Over the years, more conventional technologies (WMS and Voice Selection) have grown significantly, and rightly so. Both provide an easy productivity boost. For higher volume operations, it's difficult to see how the day-to-day would be even possible without them. What this means, however, is that operations looking for an technological edge, or competitive advantage, can no longer look at conventional technology. Most operations have caught on.

What progressive operators are looking at now are optimization and data organization systems - more specifically, slot and capacity maintenance systems. The difference between data and actionable intelligence is the difference between a management system and an optimization system, and productivity gains are impressive.

Through these optimization systems, something called *Dynamic slotting* is made possible. Dynamic slotting enables operators to continually manage slotting through the seasons as well as through various spikes in movement, and SKU variety. As shown in the data, those who utilize dynamic slotting see a significant increase in selection and overall direct labor productivity.

ADOPTION RATES

	RETAIL		WHOLESALE	
	USE	DO NOT USE	USE	DO NOT USE
SLOTTING SYSTEM				
DRY GROCERY	38%	72%	77%	23%
COOLER	21%	79%	82%	18%
FREEZER	27%	72%	75%	15%
SELECTION TECHNOLOGY				
	VOICE	PAPER-BASED	VOICE	PAPER-BASED
DRY GROCERY	98%	2%	92%	8%
COOLER	98%	2%	92%	8%
FREEZER	98%	2%	95%	5%

SLOTting SYSTEM

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	USE	DO NOT USE	USE	DO NOT USE
Average Weekly Cases Received	553,630	644,730	376,954	310,766
Average Weekly Cases Shipped	577,394	657,496	374,108	308,975
Average Weekly Cases Handled	1,113,664	1,318,463	763,971	630,864
Average Receiving Rate Paid	811	1,180	1,011	1,283
Average Moving Stock Rate Paid	748	670	739	395
Average Selection Rate Paid	202	172	142	136
Average Loading Rate Paid	1,281	1,235	853	1,213
Average Shipping Rate Paid	180	151	118	115
Average Direct Labor Rate Paid	101	98	78	68

* All rate values reflected in cases per paid labor hour.

In both sectors, those who report using a slotting system, whether it's a technology or methodology, report significantly better productivity rates - primarily in Order Selection and overall Direct Labor. Utilizing an effective slotting system also allows for a more effective level of capacity management.

SELECTION TECHNOLOGY

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	VOICE	PAPER-BASED	VOICE	PAPER-BASED
Average Weekly Cases Received	577,605	462,490	368,704	40,249
Average Weekly Cases Shipped	598,474	497,302	364,861	49,369
Average Weekly Cases Handled	1,183,484	994,603	746,360	100,774
Average Receiving Rate Paid	890	565	1,257	272
Average Moving Stock Rate Paid	739	488	592	657
Average Selection Rate Paid	197	133	144	103
Average Loading Rate Paid	1,298	427	1,007	524
Average Shipping Rate Paid	176	102	118	89
Average Direct Labor Rate Paid	101	64	72	47

* All rate values reflected in cases per paid labor hour.

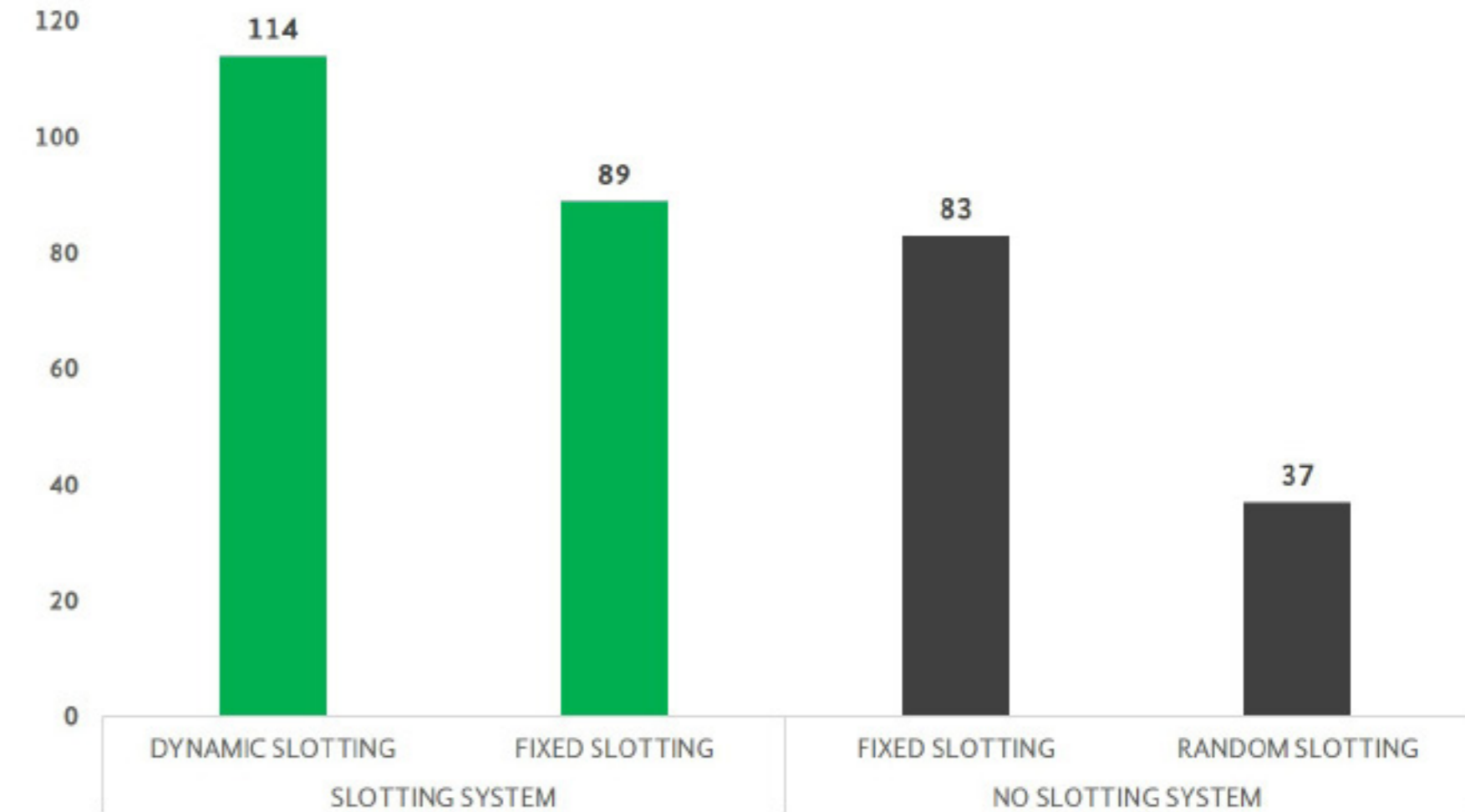
Voice-based selection is the standard across both sectors and it's clear why. The difference between voice selection and paper-based selection (which is still being used, mostly in smaller operations) is quite significant. With a difference of over 30% in Direct Labor productivity, the return on investment, for most operations, would be relatively quick.

HOW BIG OF AN IMPACT CAN OPTIMIZED SLOTTING HAVE ON AN OPERATION?

38%

IMPROVEMENT IN **DIRECT LABOR THROUGHPUT** IS REALIZED FROM DYNAMIC SLOTTING, WHICH IS ONLY POSSIBLE THROUGH THE USE OF A SLOT MAINTENANCE SYSTEM.

DIRECT THROUGHPUT RATE | CASES PER PAID HOUR



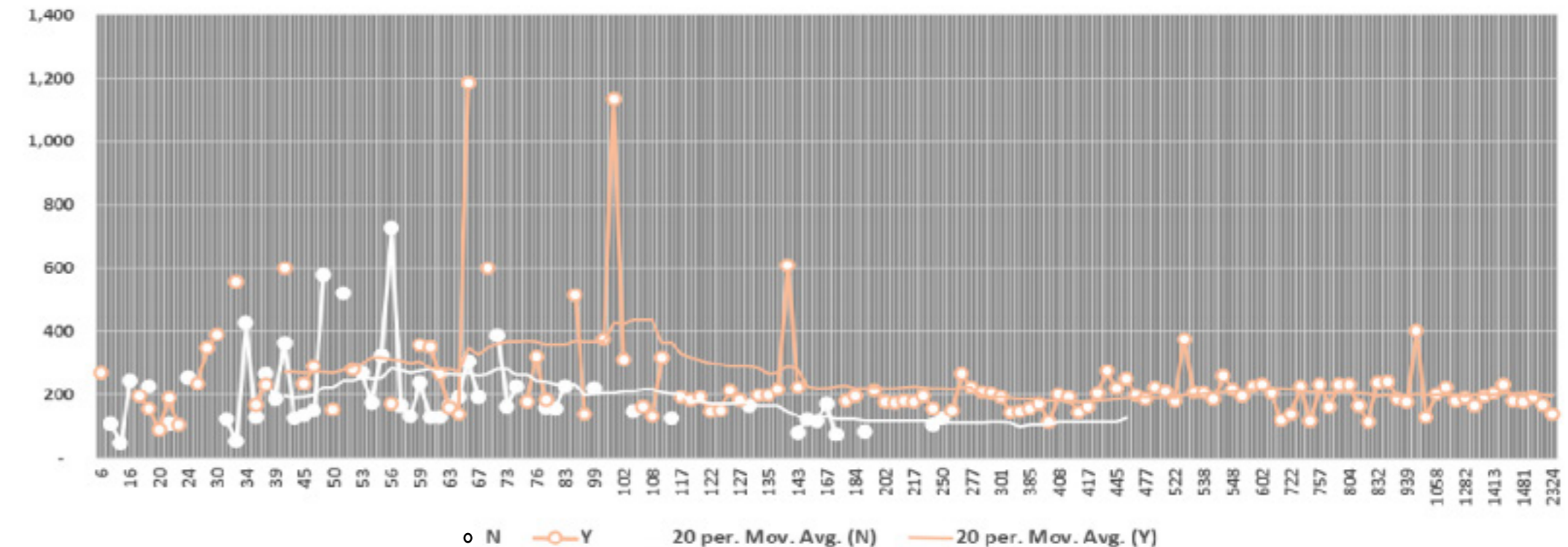
SPACE ALLOCATION AIDED BY A SLOTTING SYSTEMS

SMARTER SPACE ALLOCATION THROUGH THE USE OF A SLOTTING SYSTEM TYPICALLY RESULTS IN A 25% RISE IN DIRECT LABOR PRODUCTIVITY.

Overall, utilizing a slotting tool does translate into higher productivity levels, but unless optimal slotting is being consistently maintained, individual results will vary.

Furthermore, as the graph suggests, Sq. Ft. / SKU is an extremely important productivity metric, as even with a slotting system in place, proper space utilization is paramount.

CASES PER PAID HOUR



AVERAGE SQ. FT. PER SKU

CONTROLLABLE FACTORS

PRACTICES & PROCESSES

BEST PRACTICES ESTABLISH STRUCTURE AND CREATE GUIDELINES, WHICH ARE EXTREMELY IMPORTANT TO THE DAY-TO-DAY OPERATION OF A FACILITY. THIS MEANS, HOWEVER, THAT CHANGE CAN BE DIFFICULT.

WHEN IT COMES TO BEST PRACTICES THERE ARE NO SILVER BULLETS. NO TWO OPERATIONS ARE THE SAME AND THEREFORE NOT ALL PRACTICES WILL BE THE BEST FOR EVERY OPERATION.

Selection incentives and **engineered standards** - specific and pre-set selection productivity guidelines - both attempt to establish a productivity benchmark, and in most occasions, are used in concert. They are widely adopted by both retailers and wholesalers, but the data suggests that only a marginal gain in productivity can be had. This tells us that despite both being best practices themselves, the productivity gains are primarily dependant on the pre-set expectations. Guidelines should be attainable but the bar should be high as to not limit productivity.

Slotting of SKUs is a term that is used to describe how items are situated within a facility. Random slotting - no methodology or logic behind where items are located - is rarely recommended, regardless of the size of the operation. Fixed slotting - each item has a fixed location within the facility - is the most widely used today in both sectors; however, Dynamic slotting, a new concept where item locations are dynamic based on volume, variety, facility capacity, item sequencing and more. Dynamic slotting is only possible with the use of an optimization system.

Selection Methodology - the process followed by order selectors when picking outbound orders - varies greatly by sector and even temperature zone. In general, Discreet selection - picking one order, one line at a time - is highly adopted. Wholesale operations typically prefer Zone picking - assigning a selector to a specific zone - and rarely use Batch picking - picking a group of orders at the same time. AB picking - picking two orders at the same time (typically used with small order sizes) is extremely rare in a retail environment, but under the right circumstances, can be quite advantageous.

ADOPTION RATES

	RETAIL			WHOLESALE			
	USE	DO NOT USE		USE	DO NOT USE		
SELECTION INCENTIVES							
DRY GROCERY	76%	24%		78%	22%		
COOLER	78%	22%		73%	27%		
FREEZER	77%	23%		75%	25%		
SELECTION ENGINEERED STANDARDS							
DRY GROCERY	100%	0%		84%	16%		
COOLER	95%	5%		87%	13%		
FREEZER	100%	0%		84%	16%		
SLOTTING OF SKUS	FIXED	DYNAMIC	RANDOM	FIXED	DYNAMIC	RANDOM	
DRY GROCERY	95%	5%	0%	91%	9%	0%	
COOLER	97%	0%	3%	97%	0%	3%	
FREEZER	95%	0%	5%	90%	10%	0%	
SELECTION METHODOLOGY	BATCH	ZONE	DISCREET	BATCH	ZONE	DISCREET	AB PICKING
DRY GROCERY	20%	6%	74%	8%	64%	20%	8%
COOLER	18%	10%	72%	0%	61%	39%	0%
FREEZER	23%	73%	4%	3%	60%	27%	10%

SELECTION INCENTIVES

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	USE	DO NOT USE	USE	DO NOT USE
Average Weekly Cases Received	582,845	550,900	418,615	126,959
Average Weekly Cases Shipped	602,796	575,824	416,962	121,511
Average Weekly Cases Handled	1,189,727	1,146,492	848,421	258,851
Average Receiving Rate Paid	832	921	1,234	859
Average Moving Stock Rate Paid	767	579	675	444
Average Selection Rate Paid	195	185	143	132
Average Loading Rate Paid	1,196	1,308	851	1,420
Average Shipping Rate Paid	167	193	118	108
Average Direct Labor Rate Paid	100	97	75	57

* All rate values reflected in cases per paid labor hour.

Selection incentives are widely used across both sectors. Incentive structures will differ by operation; however, the productivity gains are quite consistent. Incentives should set a high but attainable standard and should be combined with other selection best practices to ensure the highest level of success.

SELECTION ENGINEERED STANDARDS

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	USE	DO NOT USE	USE	DO NOT USE
Average Weekly Cases Received	577,630	389,659	196,606	
Average Weekly Cases Shipped	595,459	385,284	177,029	
Average Weekly Cases Handled	1,181,046	787,518	357,502	
Average Receiving Rate Paid	886	1,317	283	
Average Moving Stock Rate Paid	734	564	882	
Average Selection Rate Paid	194	141	135	
Average Loading Rate Paid	1,268	1,033	650	
Average Shipping Rate Paid	174	118	106	
Average Direct Labor Rate Paid	100	73	59	

* All rate values reflected in cases per paid labor hour.

Selection Engineered Standards have a very high adoption rate. In fact, no retailer reported not using them in Dry Grocery. Generally speaking, engineered standards don't improve productivity by themselves - they just set the bar. Like incentives, the bar should be set high, but should be attainable.

SLOTING OF SKUS

SELECTION METHODOLOGY

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	FIXED	DYNAMIC	FIXED	DYNAMIC
Average Weekly Cases Received	577,630	461,562	320,600	2,013,122
Average Weekly Cases Shipped	595,459	611,872	319,364	1,949,310
Average Weekly Cases Handled	1,181,046	1,087,254	652,517	3,942,432
Average Receiving Rate Paid	886	734	1,129	2,232
Average Moving Stock Rate Paid	734	660	582	2,310
Average Selection Rate Paid	194	208	140	153
Average Loading Rate Paid	1,268	1,391	961	1,846
Average Shipping Rate Paid	174	181	115	142
Average Direct Labor Rate Paid	100	108	70	119

* All rate values reflected in cases per paid labor hour.

Slotting methodology refers to the type of slotting system in place. Fixed slotting is the most common methodology across both sectors; however, Dynamic slotting, which is only possible by implementing a slot maintenance program, is significantly more productive. Operators looking for a competitive advantage should look into implementing Dynamic Slotting.

* DRY GROCERY ONLY

	RETAIL			WHOLESALE			
	BATCH	ZONE	DISCREET	BATCH	ZONE	DISCREET	AB PICKING
Average Weekly Cases Received	501,228	663,742	585,847	570,795	312,596	489,130	178,912
Average Weekly Cases Shipped	518,538	683,117	608,110	574,240	304,312	480,123	193,017
Average Weekly Cases Handled	1,037,080	1,355,649	1,119,871	1,157,817	626,886	986,099	377,009
Average Receiving Rate Paid	827	1,119	886	592	1,198	1,561	1,007
Average Moving Stock Rate Paid	542	493	795	729	654	620	336
Average Selection Rate Paid	202	224	192	144	140	133	148
Average Loading Rate Paid	1,384	1,619	1,211	1,153	776	923	1,852
Average Shipping Rate Paid	201	193	167	129	114	108	121
Average Direct Labor Rate Paid	88	102	101	80	70	69	64

* All rate values reflected in cases per paid labor hour.

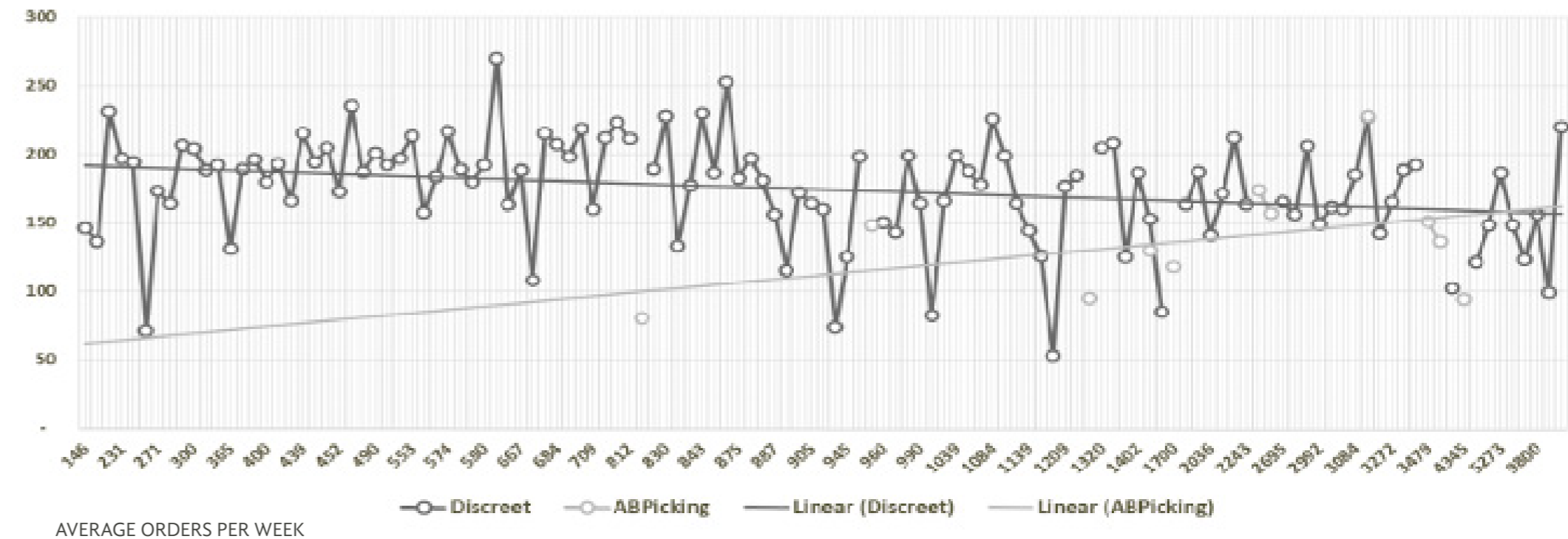
Selection methodology adoption rates are not only different between sectors, but also between temperature zones. In Dry Grocery, retailers favor Discreet while wholesalers primarily use Zone. Discreet is order selection in its simplest form, which is why it has a high adoption rate; however, even in retail, there could be more productive alternatives depending on order size and pick path length.

THIS PROVIDES A CLEAR EXAMPLE OF THE IMPACT SELECTION METHODOLOGIES HAVE ON PRODUCTIVITY.

Productivity drops as orders increase under discreet order picking (one order at a time), but that is not the case for AB picking (selecting 2 orders while placing one in pallet "A" and the other one in pallet "B"), which allows operators to minimize selection travel regardless of the quantity of orders.

Pick path planning, mobile equipment, and slotting technology are all key in creating

CASES PER PAID HOUR



INDIRECT LABOR RATIOS

Management/Administration support services, otherwise known as non-touch labor, represents **30-35 % of the total** hours reported in this year's distribution center survey. This overall statistic combined with the cost of indirect labor is important to keep an eye on as many of the companies surveyed this year have introduced some form of automation into their distribution centers. The maintenance support costs and total through-put rates are important metrics to compare when making comparisons.

Insights into how to perform relatively simple ratios for comparison can yield important insights into your business. The Operator to Manager / Supervisor Ratios below represent the average and best-in-class (Top 10%) survey findings.

Management to Direct Labor Ratio

Best-in-Class - 1 Manager per 59 Direct Labor Employees

Average - 1 Manager per 52 Direct Labor Employees

Supervisor to Direct Labor Ratio

Best-in-Class - 1 Supervisor per 17 Direct Labor Employees

Average - 1 Supervisor per 16 Direct Labor Employees



HOW DOES BEING ABOVE AVERAGE AFFECT YOUR BOTTOM LINE?

METRIC: DIRECT LABOR RATE (CASES PER HOUR)
CONSTANT: AVERAGE WEEKLY CASES SHIPPED

To provide an example of how significant this can be to a below-average participant, we've included a calculation contrasting operators with an above average direct labor productivity score against operations with a below-average direct labor productivity score.

THE EQUATION

This basic equation shows the difference in direct labor hours resulting from applying both below and above-average rates (**cases shipped / paid direct labor hour**) to the same (average) weekly cases shipped amount. Once the difference is calculated, the resulting hours are then annualized (multiplied by 52 weeks) and then converted into dollars by **applying an assumed hourly pay rate of \$20.00** to find the final total annual opportunity

	RETAIL		WHOLESALE	
	BELOW AVERAGE	ABOVE AVERAGE	BELOW AVERAGE	ABOVE AVERAGE
AVG. DIRECT LABOR PAID RATE <i>CASES PER PAID HOUR</i>				
	100		70	
WEEKLY CASES SHIPPED	595,879		366,334	
DIRECT LABOR PAID RATE <i>CASES PER PAID HOUR</i>	91	112	57	87
DIRECT LABOR HOURS	6,548	5,320	6,426	4,210
HOURLY LABOR RATE <i>ALL-IN RATE</i>	\$20.00	\$20.00	\$20.00	\$20.00
TOTAL ANNUAL OPPORTUNITY <i>BETWEEN ABOVE AND BELOW AVERAGE</i>	\$1,277,120		\$2,304,640	

COOLER

FREEZER

RETAIL

WHOLESALE

RETAIL

WHOLESALE

AVG. DIRECT LABOR PAID RATE

102

76

AVG. DIRECT LABOR PAID RATE

91

69

CASES PER PAID HOUR

CASES PER PAID HOUR

WEEKLY CASES SHIPPED

347,113

226,943

WEEKLY CASES SHIPPED

133,440

87,583

BELOW AVERAGE

ABOVE AVERAGE

BELOW AVERAGE

ABOVE AVERAGE

BELOW AVERAGE

ABOVE AVERAGE

BELOW AVERAGE

ABOVE AVERAGE

DIRECT LABOR PAID RATE

90

111

59

95

DIRECT LABOR PAID RATE

80

99

52

92

CASES PER PAID HOUR

CASES PER PAID HOUR

DIRECT LABOR HOURS

3,856

3,127

3,846

2,388

DIRECT LABOR HOURS

1,668

1,347

1,684

952

HOURLY LABOR RATE

\$20.00

\$20.00

\$20.00

\$20.00

HOURLY LABOR RATE

\$20.00

\$20.00

\$20.00

\$20.00

ALL-IN RATE

ALL-IN RATE

TOTAL YEARLY OPPORTUNITY

\$758,166

\$1,516,320

TOTAL YEARLY OPPORTUNITY

\$333,840

\$761,280

BETWEEN ABOVE AND BELOW AVERAGE

BETWEEN ABOVE AND BELOW AVERAGE



WHAT IT MEANS TO BE **BEST IN CLASS**

A BEST-IN-CLASS OPERATOR IS ONE THAT EXISTS WITHIN THE **TOP 10%**, BY **DIRECT LABOR THROUGHPUT**, IN ONE OR MORE OF THE FOLLOWING CLASSES:

1. OVERALL (ALL SURVEYS, FACILITIES, AND TEMPERATURE)
2. BUSINESS SECTOR (WHOLESALE & RETAILERS)
3. WAREHOUSE TYPE (DRY, COOLER & FREEZER)
4. MATERIAL HANDLING EQUIPMENT (CONVENTIONAL & AUTO)

TOP 10%

SCORECARD COMPARISON

* DRY GROCERY ONLY

	RETAIL		WHOLESALE	
	BEST-IN-CLASS	THE REST	BEST-IN-CLASS	THE REST
Average Weekly Cases Received	680,728	562,530	836,078	300,936
Average Weekly Cases Shipped	749,688	578,303	839,193	297,826
Average Weekly Cases Handled	1,437,239	1,149,086	1,688,155	610,999
Average Receiving Rate Paid	940	876	1,598	1,011
Average Moving Stock Rate Paid	1,280	667	1,311	535
Average Selection Rate Paid	196	191	183	135
Average Loading Rate Paid	1,808	1,218	1,511	918
Average Shipping Rate Paid	177	173	162	110
Average Direct Labor Rate Paid	125	96	112	65

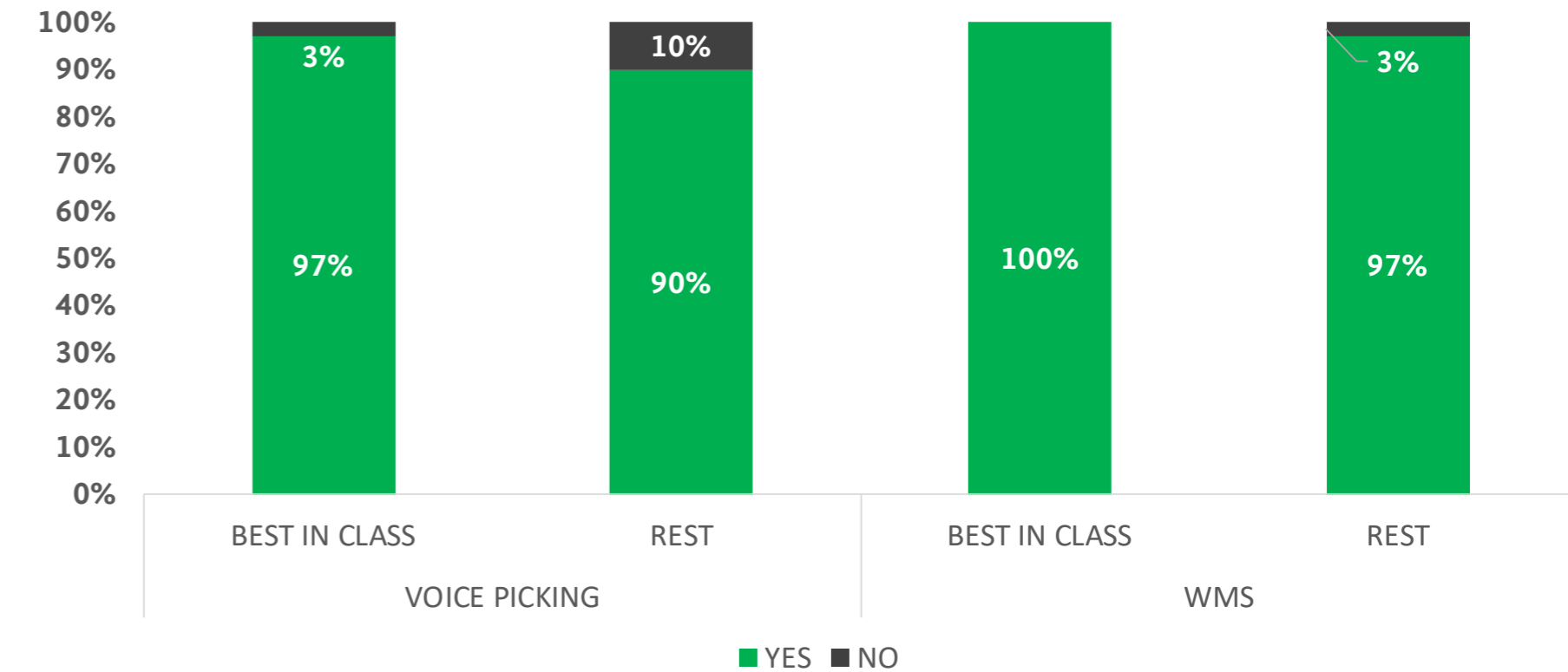
* All rate values reflected in cases per paid labor hour.

* Rates exclude fully-automated facilities

* Best-in-class operators judged by Direct Labor Case /Paid Hour Throughput

ESTABLISHED TECHNOLOGY

BOTH BEST IN CLASS AND THE REST HAVE HIGH ADOPTION LEVELS FOR TECHNOLOGIES SUCH AS WAREHOUSE MANAGEMENT SYSTEMS AND VOICE PICKING, MAKING THEM WELL ESTABLISHED TECHNOLOGY AS OPPOSED TO KEY DIFFERENTIATORS.

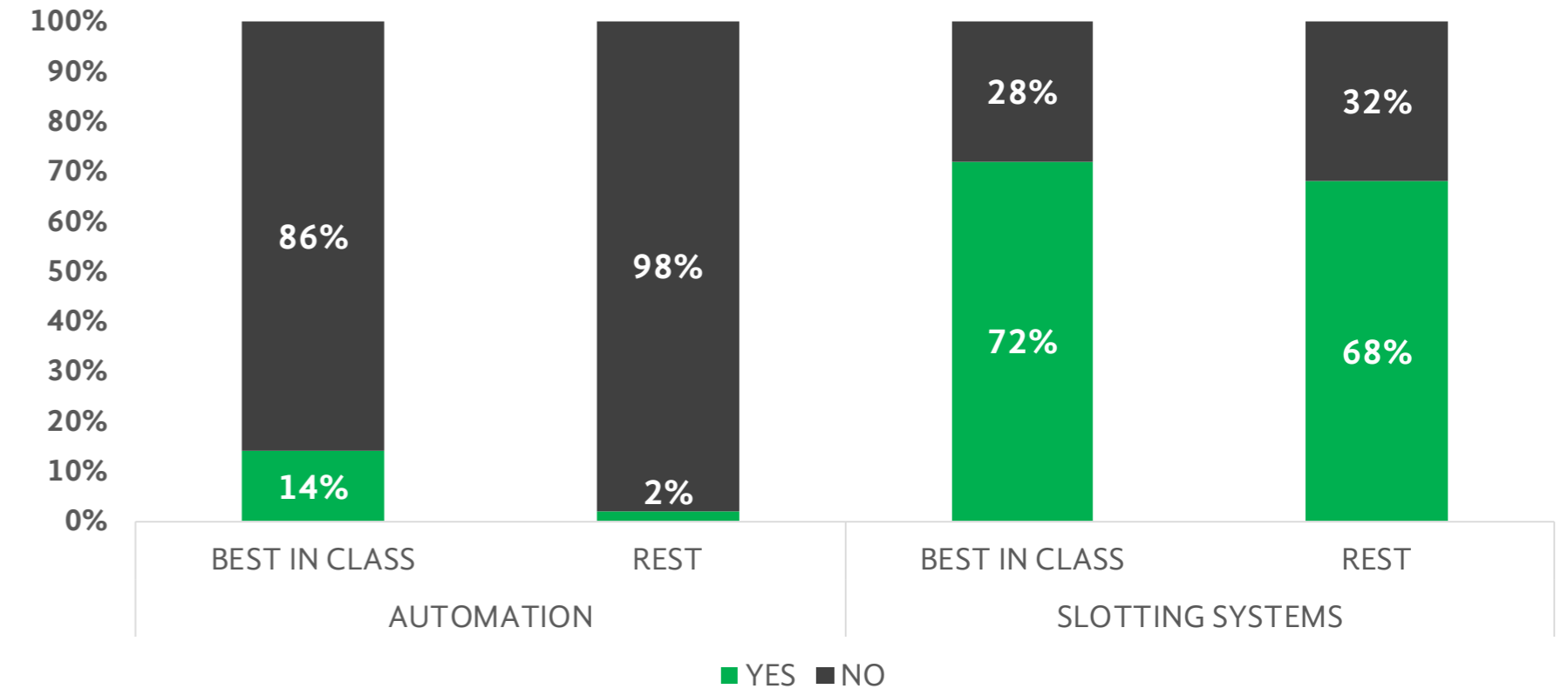


EMERGING TECHNOLOGY

WHEN IT COMES TO AUTOMATED SOLUTIONS, AND OPTIMIZATION SYSTEMS SUCH AS SLOTTING, BEST IN CLASS OPERATORS HAVE HIGHER ADOPTION LEVELS THAN THE REST.

THESE TECHNOLOGIES, WHILE THEY HAVE BEEN AROUND FOR DECADES, HAVE HAD AN EXPONENTIAL EVOLUTION, AND ARE EXPECTED TO REALLY TAKE OFF IN THE IMMEDIATE FUTURE.

BEING AN EARLY ADOPTER, IN MANY CASES, PAYS OFF.



BEST IN CLASS

KEY PRODUCTIVITY RATES IN CASES PER PAID HOUR INCLUDE SELECTION, OVERALL DIRECT LABOR AND TOTAL THROUGHPUT.

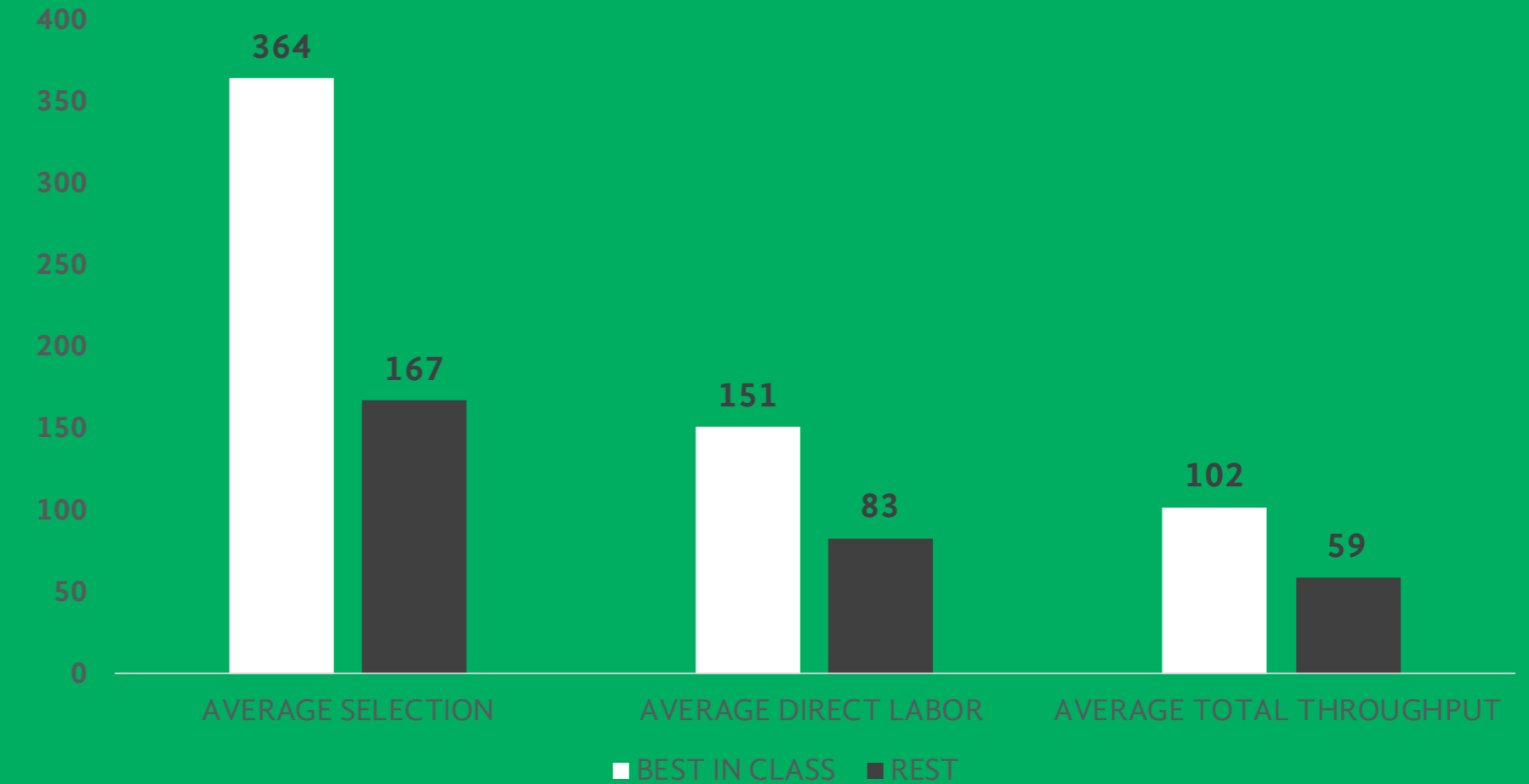
WHEN ALL FACILITIES ARE INCLUDED, BEST IN CLASS OPERATORS SEE KEY PRODUCTIVITY RATES THAT ARE TWO TIMES GREATER THAN THE AVERAGE PARTICIPANT.

2X

PRODUCTIVITY COMPARISON | ALL FACILITIES

CASES PER PAID HOUR

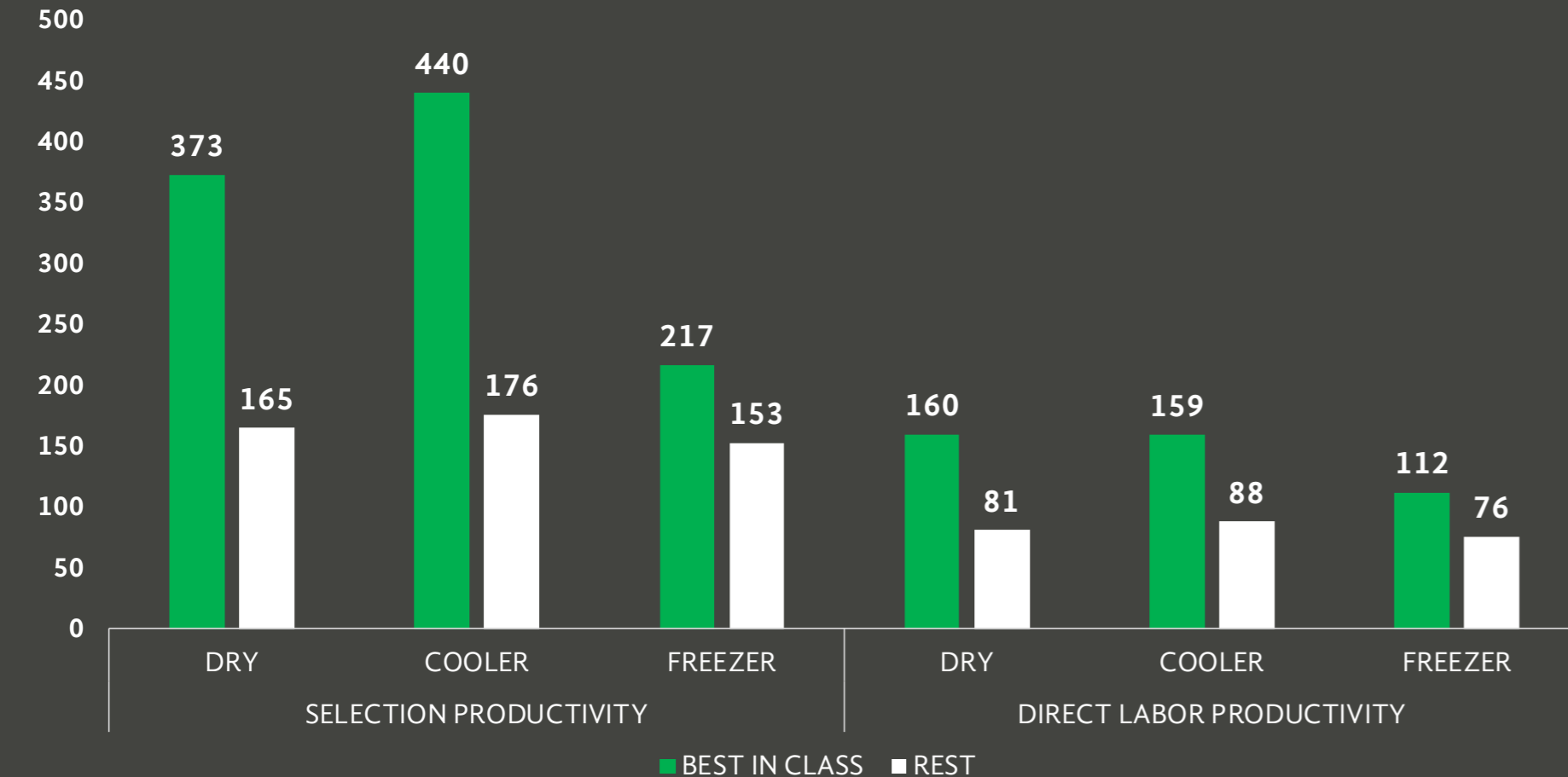
INCLUSIVE OF FULLY AUTOMATED FACILITIES



BEST IN CLASS

RANKINGS | BY TEMPERATURE ZONE

CASES PER PAID HOUR INCLUSIVE OF FULLY AUTOMATED FACILITIES



THE TOP 10% OPERATORS IN EACH TEMPERATURE ZONE OUTPERFORM THE REST BY A RATIO OF:

2:1

FOR MOST OPERATORS, THE BIGGEST IMPROVEMENT OPPORTUNITY EXISTS IN THE COOLER, FOLLOWED CLOSELY BY DRY. HIGHER CASE VOLUMES IN THESE TWO TEMPERATURE ZONES PROVIDE GREATER LEVERAGE FOR IMPROVEMENT.

BEST IN CLASS

WORK - PAID HOUR SPREAD

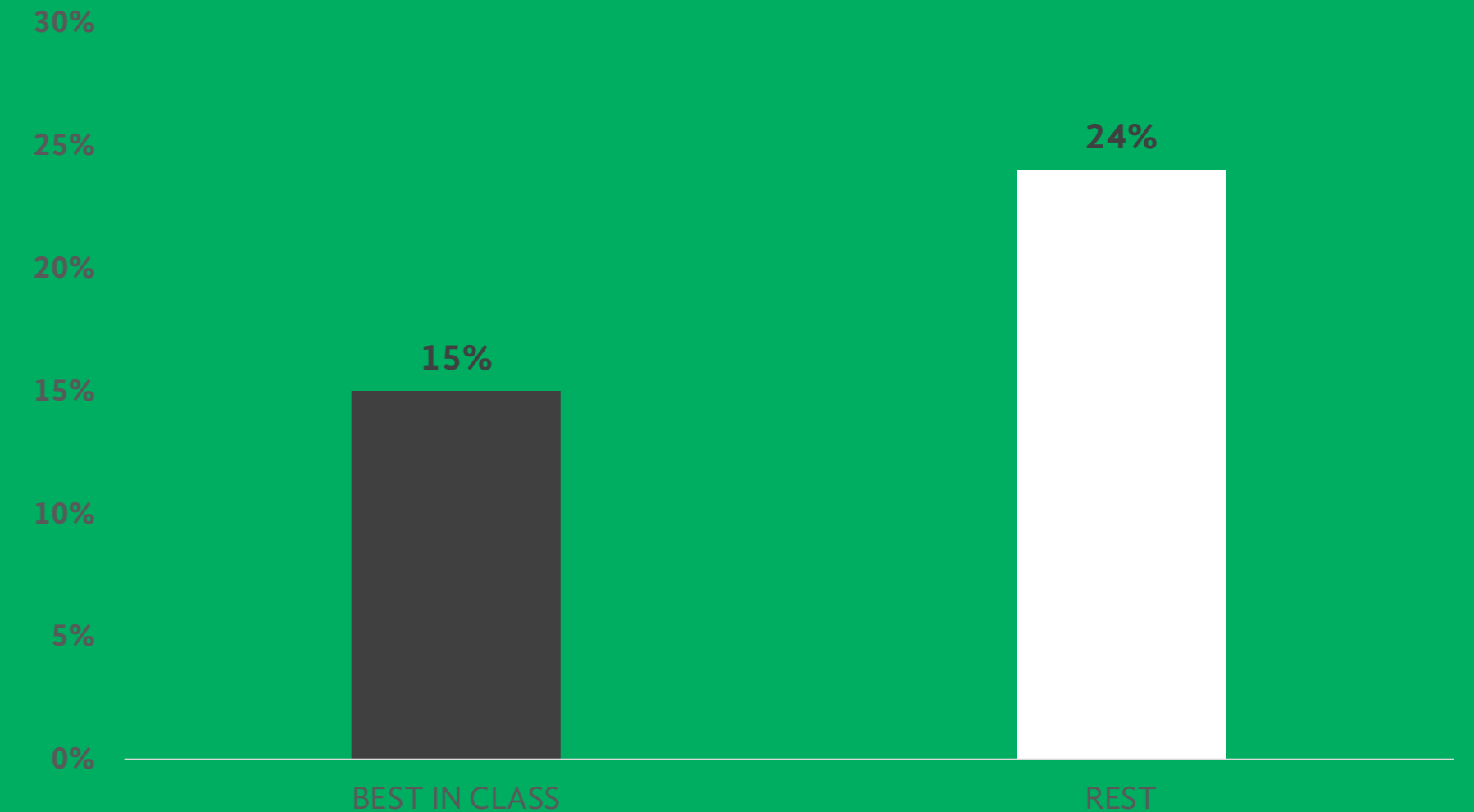
SELECTION IS TYPICALLY BROKEN DOWN BY:

1. TRAVEL TIME
2. PICKING/STACKING TIME
3. OTHER (SET-UP, PRINTING, ETC.)

PROPERLY SEQUENCING ITEMS AND USING TECHNOLOGY TO AUTOMATE DECISION MAKING WILL HELP REDUCE SET-UP TIME, AND THUS THE SPREAD BETWEEN WORKED AND PAID HOURS.

BEST-IN-CLASS OPERATORS TRIM OFF ANY UNNECESSARY HOURS BETWEEN WORKED AND PAID. OPERATIONS ARE MORE STREAMLINED AND ORGANIZED, AND THE LABOR SAVINGS GO RIGHT TO THE BOTTOM LINE COST-PER-CASE.

HOW BIG IS THE **GAP** BETWEEN WORKED HOURS AND PAID HOURS?



BEST IN CLASS

BY WAREHOUSE ENVIRONMENT

THE BEST IN CLASS OPERATOR WITH AUTOMATION OUTPERFORMS ITS CONVENTIONAL PEERS BY A RATIO OF:

2.5:1

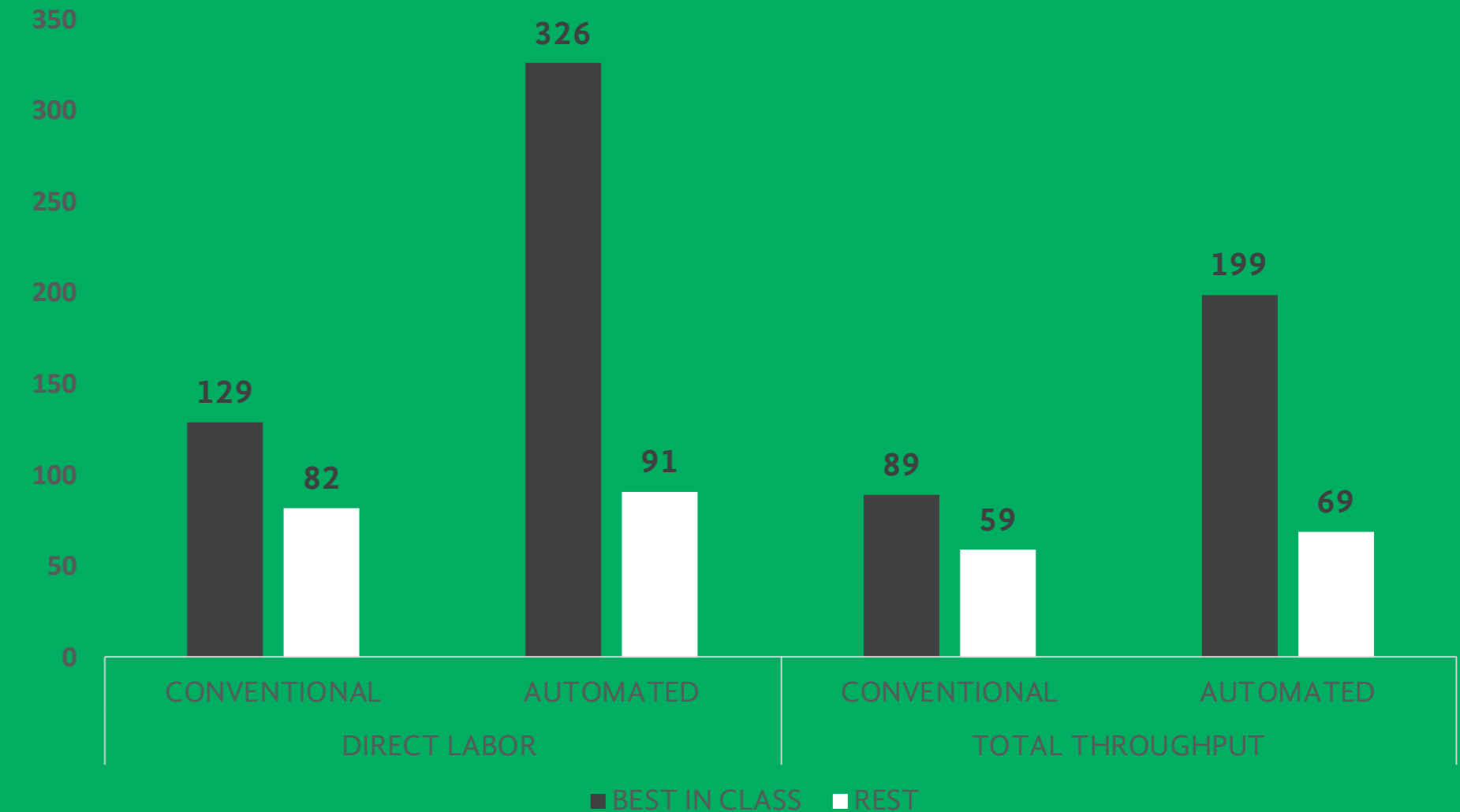
HOWEVER, THE BEST IN CLASS CONVENTIONAL OPERATORS ARE STILL 41% MORE PRODUCTIVE THAN THE AVERAGE AUTOMATED OPERATOR.

INVEST IN OPTIMIZING YOUR CONVENTIONAL METHODS BEFORE EXPLORING AUTOMATION. A BIG INVESTMENT DOESN'T ALWAYS PROVIDE A PRODUCTIVITY BOOST.

CONVENTIONAL VS. AUTOMATED

DIRECT LABOR | TOTAL THROUGHPUT

CASES PER PAID HOUR



WHAT IS THE BENEFIT OF BEING A BEST-IN-CLASS OPERATOR? WE WILL SHOW YOU.

METRIC: DIRECT LABOR RATE (CASES PER HOUR)
CONSTANT: AVERAGE WEEKLY CASES SHIPPED

To provide an example of how significant this can be to the average participant, we've included a calculation contrasting rates from operators with a direct labor rate in the top 10% against operators with a direct labor rate in the bottom 90%.

THE EQUATION

This basic equation shows the difference in direct labor hours resulting from applying both below and above-average rates (**cases shipped / paid direct labor hour**) to the same (average) weekly cases shipped amount. Once the difference is calculated, the resulting hours are then annualized (multiplied by 52 weeks) and then converted into dollars by **applying an assumed hourly pay rate of \$20.00** to find the final total annual opportunity

	RETAIL		WHOLESALE	
	BOTTOM 90%	TOP 10%	BOTTOM 90%	TOP 10%
WEEKLY CASES SHIPPED	595,879		366,334	
DIRECT LABOR PAID RATE <i>CASES PER PAID HOUR</i>	96	125	65	112
DIRECT LABOR HOURS	6,207	4,767	5,635	3,270
HOURLY LABOR RATE <i>ALL-IN RATE</i>	\$20.00	\$20.00	\$20.00	\$20.00
TOTAL YEARLY OPPORTUNITY <i>BETWEEN ABOVE AND BELOW AVERAGE</i>	\$1,497,600		\$2,459,600	

RETAIL

WHOLESALE

RETAIL

WHOLESALE

WEEKLY CASES SHIPPED

347,113

226,943

WEEKLY CASES SHIPPED

133,440

87,583

BOTTOM 90%

TOP 10%

BOTTOM 90%

TOP 10%

BOTTOM 90%

TOP 10%

BOTTOM 90%

TOP 10%

DIRECT LABOR PAID RATE

94

128

72

113

DIRECT LABOR PAID RATE

89

112

60

105

CASES PER PAID HOUR

CASES PER PAID HOUR

DIRECT LABOR HOURS

3,692

2,711

3,707

2,008

DIRECT LABOR HOURS

1,499

1,191

1,459

834

HOURLY LABOR RATE

\$20.00

\$20.00

\$20.00

\$20.00

HOURLY LABOR RATE

\$20.00

\$20.00

\$20.00

\$20.00

ALL-IN RATE

ALL-IN RATE

TOTAL YEARLY OPPORTUNITY

\$1,020,240

\$1,766,960

TOTAL YEARLY OPPORTUNITY

\$320,320

\$650,000

BETWEEN ABOVE AND BELOW AVERAGE

BETWEEN ABOVE AND BELOW AVERAGE



OTHER KEY PRODUCTIVITY DRIVERS



1. PICK LINE LENGTH

- Eliminate unnecessary selection travel by minimizing pick line length

2. ITEM DENSITY

- Identify candidates that may be suitable for a very narrow aisle (VNA) set-up

3. SLOTTING OPTIMIZATION STRATEGIES

- Evaluate slotting strategies, like Dynamic Slotting, that will improve capacity utilization and selection productivity.

4. ADJSUT LAYOUT CONFIGURATION

- Optimal rack configurations can increase both capacity utilization and selection productivity.

5. MATERIALS HANDLING EQUIPMENT AND METHODOLOGY

- The correct material handling equipment, both fixed and mobile, is integral to maintaining a high level of productivity.

6. BUILDING HEIGHT AND RACK PROFILES

- Facilities continue to get higher, but maintaining optimal rack profiles is extremely important.

7. PRODUCT FLOW AND PICKING PATTERNS

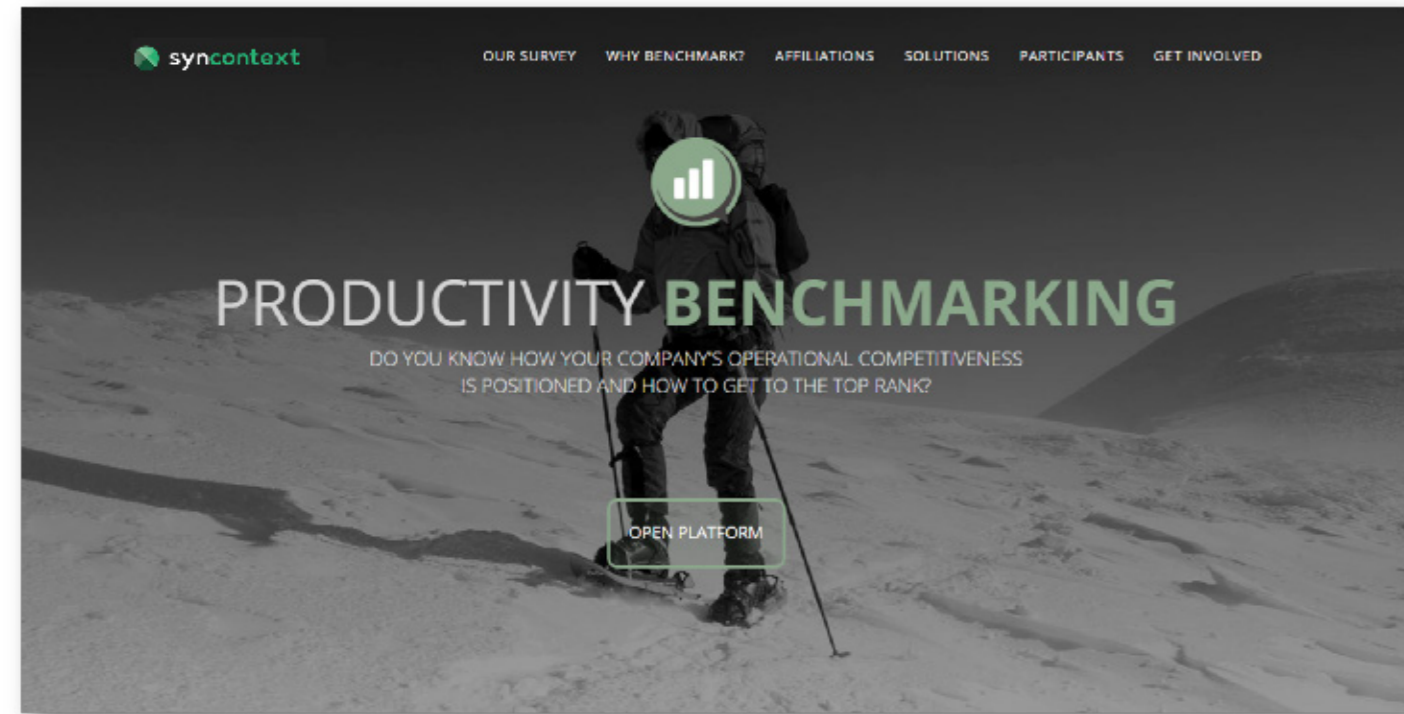
- Identify cross-docking opportunities, as well as any flow-through or reverse line pick candidates.

8. DOCK SIZE & CONFIGURATION

- Avoid turning the dock into your operations bottle neck.

NOT ENROLLED?

UPCOMING STUDY | OCTOBER 2016



| [FIND OUT MORE](#)

WWW.PRODUCTIVITYBENCHMARKING.COM

Along with being one of the largest supply chain productivity databases in the world, our platform is also one of the most in-depth when it comes to metrics and comparisons.

To create the most organized and streamlined data entry process as possible, we've split our platform into two sections.

Section One consists of general comparison information that typically remains the same throughout the year, such as questions that focus on the facility, operations, fixed and mobile equipment, as well as technology and outlook.

Section Two is comprised of operational metrics, typically from a unique four-week sample period.

The goal is **not** to provide you with more data...
The goal is to provide precise and **actionable intelligence.**

STUDY PARTICIPANTS RECEIVE

- PERSONALIZED PRODUCTIVITY REPORT
- ACCESS TO INDUSTRY REPORT AND FINDINGS PRESENTATION
- COMPLIMENTARY ACCESS TO DYNAMIC PRODUCTIVITY DASHBOARD

PERSONALIZED PRODUCTIVITY REPORT



All study participants will receive a confidential, and personalized, productivity report which details the following:

1. In-depth general study sample analysis
2. Personalized facility-specific productivity analysis and study sample comparisons
3. Personalized improvement opportunity calculations
4. A confidential “grade” of your facility by function, relative to other participants in the study.
5. Best practice implementation roadmap

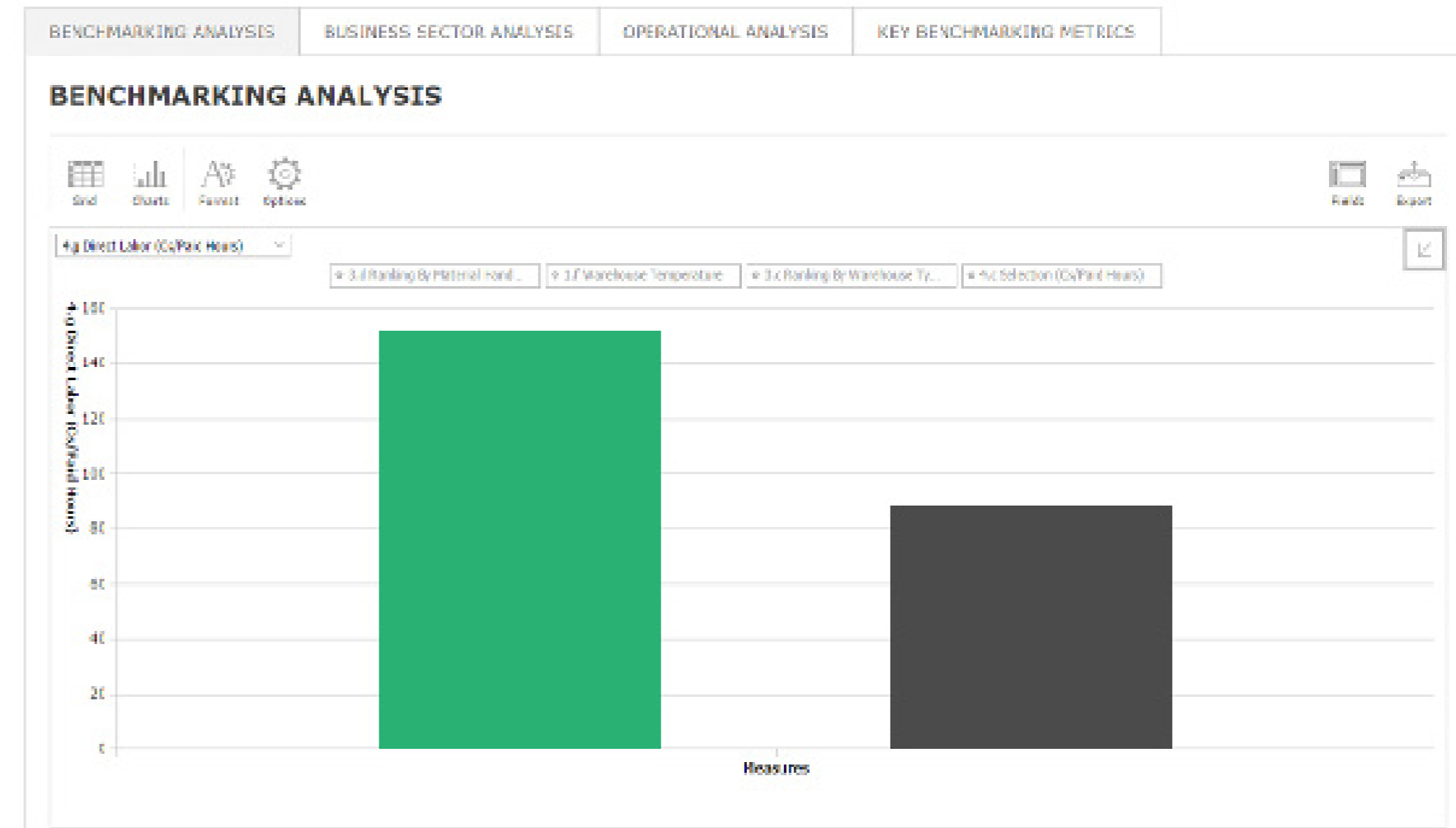
Together with your internal productivity monitoring tools, this report will add context to your operation and assist you and your management team in identifying potential opportunities to achieve operating goals. Intelligence will offer context to your operation to compare past and present productivity results in order to monitor progress

DYNAMIC DASHBOARD

TAKE CONTROL OF YOUR DATA & CREATE YOUR OWN INSIGHTS

Our interactive dashboard will allow you to explore far beyond the reach of this report. With the entirety of the study sample at your disposal, you are free to explore virtually every productivity metric you can imagine.

Build your own benchmarks, and make your data work for you.



If you have any questions regarding this study, or would like to discuss your individual results, we would love to hear from you.



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